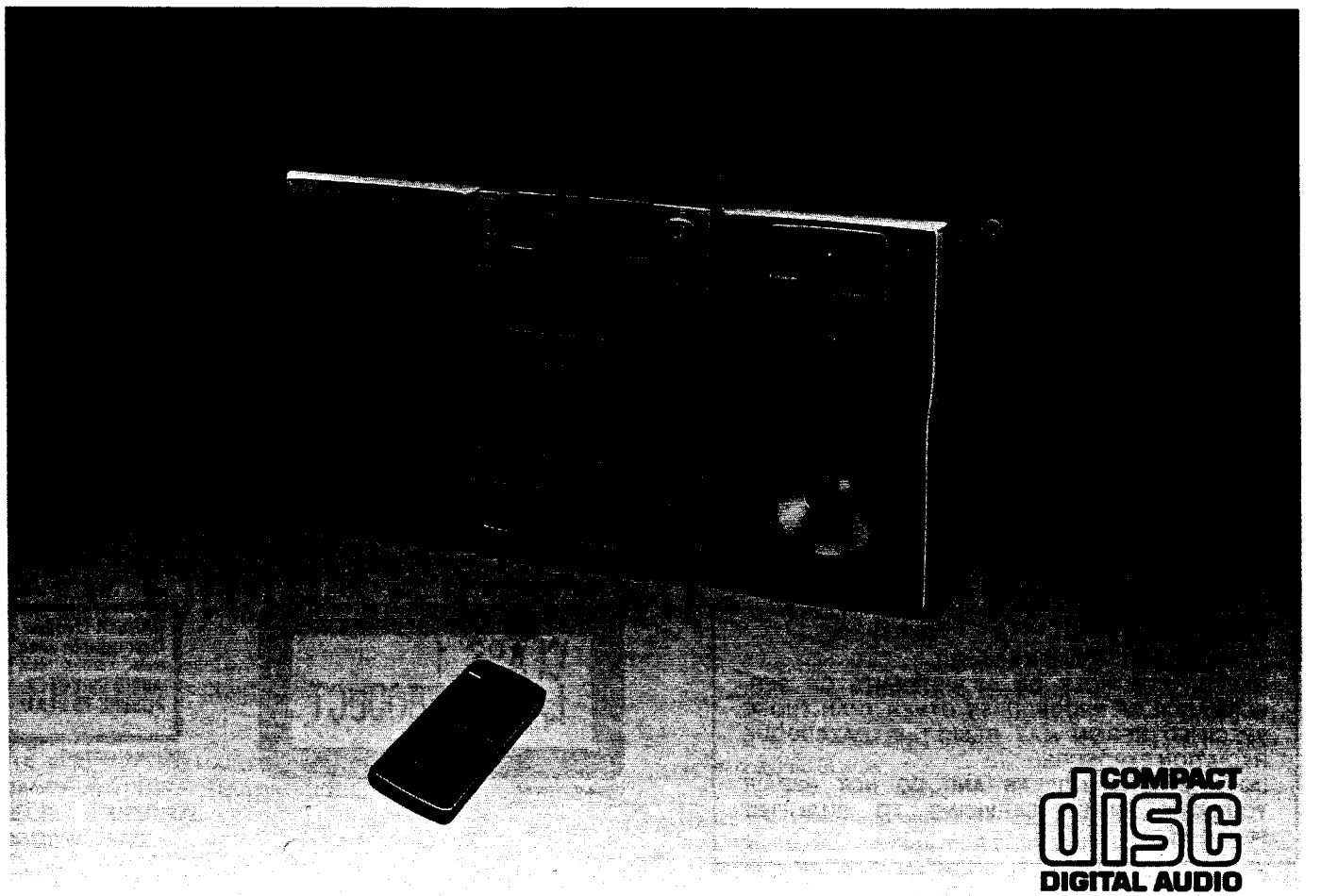
Panasonic

CD Stereo System

SC-CH55

Operating Instructions



Notes:

- Specifications differ according to the area code.
- The "EB" area code, for example, indicates United Kingdom specifications.
- The "EB" indication is shown on the packing case and serial number tag.

Before operating this unit, please read these instructions completely.

EB GN

RQT1322-B

F0891R0

Dear Stereo Fan

We want to thank you for selecting this product and to welcome you to the growing family of satisfied Panasonic product owners around the world.
We feel certain you will get maximum enjoyment from this new addition to your home.
Please read these operating instructions carefully, and be sure to keep them handy for convenient reference.

These operating instructions are applicable to the following systems.

System	Audio center	Speakers
SC-CH55	SA-CH55	SB-CH55

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CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

(Back of product)

(Inside of product)

THIS TUNER/RECEIVER IS CAPABLE OF RECEIVING THE NEW AM STEREO BROADCASTS FROM THE AM BAND RADIO STATIONS. HOWEVER LIKE MANY TUNERS AND RECEIVERS CURRENTLY AVAILABLE ON THE MARKET IT WILL REPRODUCE THIS AM STEREO SIGNAL ONLY IN AM MONO, WHICH, IN EFFECT, IS OF NO LESSER QUALITY THAN YOUR EXISTING AM MONO TUNER/RECEIVER.

Suggestions for Safety

■ Use a standard AC wall outlet

1. **Use from an AC power source of high voltage, such as for an air conditioner, is very dangerous.**
   There is the possibility that a fire might be caused by making such a connection.
2. **A DC power source cannot be used.**
   Be sure to check the power source carefully, especially on a ship or other place where DC is used.

■ Grasp the plug when disconnecting the power supply cord

1. **Wet hands are dangerous.**
   A dangerous electric shock may result if the plug is touched by wet hands.
2. **Never place heavy items on top of the power supply cord, and never force it to bend sharply.**

■ Place the unit where it will be well ventilated

Place this unit at least 10 cm (4") away from wall surfaces, etc.
Be careful that curtains and similar materials do not obstruct the ventilation holes.

■ Avoid places such as the following:

In direct sunlight or in other places where the temperature is high.
In places where there is excessive vibration or humidity.
Such conditions might damage the cabinet and/or other component parts and thereby shorten the unit's service life.

■ Be sure to place the unit on a flat, level surface.

If the surface is inclined, a malfunction may result.

■ Never attempt to repair or reconstruct this unit

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidentally touched.

■ Take particular care if children are present

Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

■ If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.

■ Avoid spray-type insecticides

Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

■ Never use alcohol or paint thinner

These and similar chemicals should never be used, because they might cause flaking or cloudiness of the cabinet finish.

■ Disconnect the power supply cord if the unit will not be used for a long time

If the unit is left for a long time with the power ON, this will not only shorten its useful operation life, but may also cause other troubles.

■ If trouble occurs

If, during operation, the sound is interrupted or indicators no longer illuminate, or if abnormal odor or smoke is detected, immediately disconnect the power cord plug, and contact your dealer or an Authorized Service Center.

For United Kingdom

("EB" area code model only)
The "EB" indication is shown on the serial number tag.

Important

THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.
BLUE: NEUTRAL
BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows. The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.
Under no circumstances must either of the above wires be connected to the earth terminal of a three pin plug.

This apparatus was produced to BS 800.

Placement Notes

■ This unit is a precision instrument. Be sure to place it on a flat surfacae.

■ Avoid places such as the following:

- Near any equipment or divice that generates strong magnetism.
- On any heat-generating equipment or divice, or in any place where the temprature is high (35°C 95°F or higher).
- Extremely cold places (5°C 41°F or below).
- For long periods of time in direct sunlight.
- In dusty or smoky locations.
- In locations prone to vibrations.
- In locations where the rear panel is less than 10 cm (about 4") away from the wall or backof an audio rack.
- Within reach of children.

■ When carrying or storing the unit, handle it with care so it is not subjected to any strong bumps.

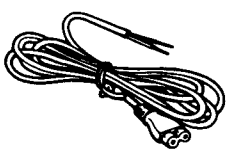
- Always remove the disc before storing the unit for any period of time.

■ To avoid problems due to vibration.

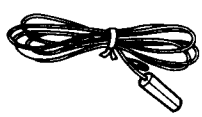
- Do not place a book or similar object under this unit.

Supplied Accessories

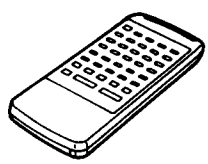
AC power supply cord 1 pc.



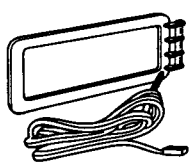
FM indoor antenna 1 pc.



Remote control transmitter <RAK-SC306W> 1 pc.

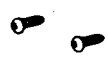


LW/MW loop antenna 1 pc.

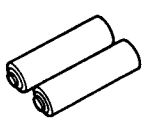


Antenna holder 1 pc.

Mounting screws 2 pcs.



Remote control batteries <UM-4, "AAA", R03> 2 pcs.



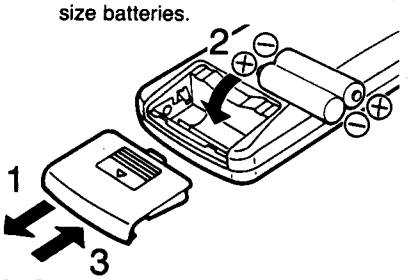
Attachment plug 1 pc. (For United Kingdom only)

Note: The configuration of AC power supply cord and FM indoor antenna differ according to area.

Remote Control Transmitter

Insertion of remote-control transmitter batteries

1. **Open the cover.**
2. **Insert the batteries.**
   - Be sure to insert according to (+) and (−) indications in the battery compartment.
   - Use two UM-4 "AAA" (R03 1.5 V) size batteries.



3. **Close the cover.**

■ Battery life

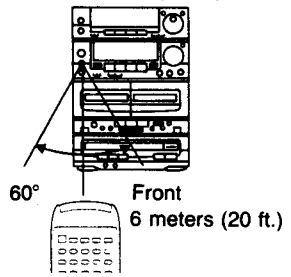
Battery life is about one year. (Battery life may vary depending upon the frequency of use and other conditions of use.)
The batteries should be replaced if the unit cannot be operated even when the remote-control transmitter is brought close to the unit.

■ Battery notes

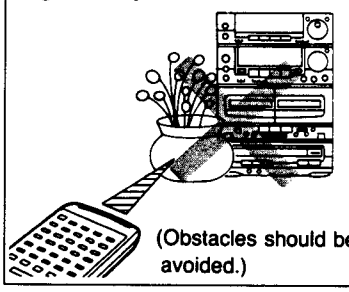
- Be sure that batteries are inserted so that they are placed correctly with respect to the (+) and (−) indications in the battery compartment. If the batteries are not inserted correctly, they may leak and damage the remote-control transmitter.
- Do not use rechargeable (nickel-cadmium) type batteries.
- Do not mix old and new batteries, or batteries of different types (carbon and alkaline, etc.).
- If the remote-control transmitter is not to be ued for a long period of time, take out the batteries and store them in a cool, dark place.
- Remove and dispose of worn-out batteries.
- Never attempt to recharge or short-circuit the batteries, and do not disassemble them or expose them to excessive heat or throw them into a fire.
- If a battery leaks, remove both batteries and dispose of them, and them thoroughly clean the battery compartment before inserting new batteries.

Remote-control transmitter operation notes

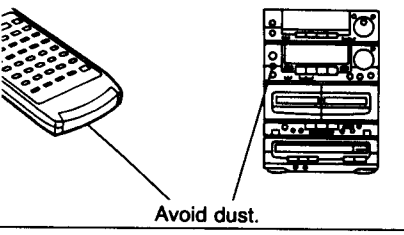
Use the remote-control transmitter within front 6 meters (20 ft.).



Face it toward the remote-control signal receptor of this unit.



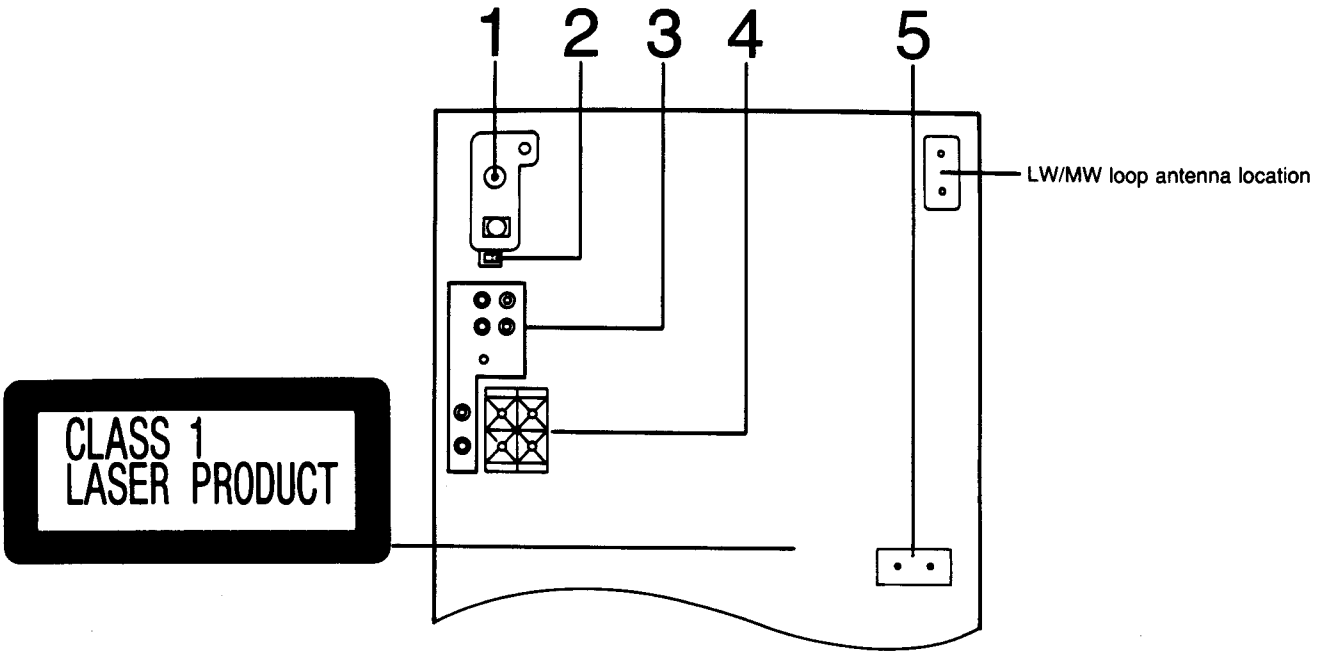
Be sure the transmitter part of the remote-control transmitter and the receptor part of this unit are free from dust.
Excessive dust might prevent reception.



Other notes

1. Do not expose the receptor (on this unit) to direct sunlight or other strong light, because to do so might result in incorrect operation.
2. Do not use a remote-control transmitter for a TV set, a VCR or other video component at the same time as this remote-control transmitter is being used, because to do so might result in incorrect operation.
3. If this unit is installed in a rack with glass doors, the glass doors' thickness or color might make it necessary to use the remote-control transmitter a shorter distance from the unit.

Connections

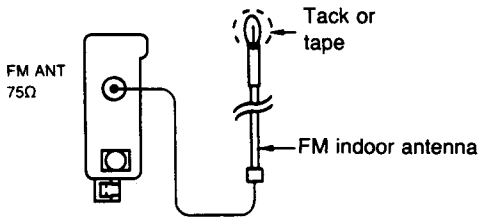


1 Connect the FM indoor antenna. (included)

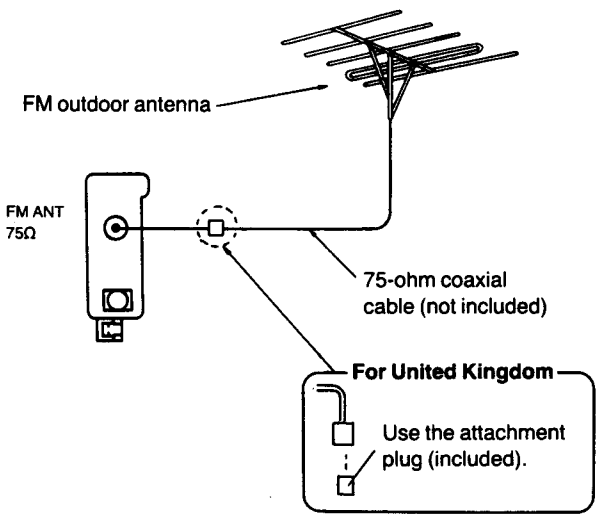
Install this antenna on a wall at a height and direction which result in best reception.

For best reception sound quality:
An FM outdoor antenna is recommended.

The tack should not contact the internal antenna wire.
Disconnect this antenna if an FM outdoor antenna is installed.



FM outdoor antenna (not included)
If the FM indoor antenna does not provide satisfactory reception of FM broadcasts, an outdoor antenna should be used.
The outdoor antenna may be required in a mountainous region, or if this unit is located inside a reinforced-concrete building, etc.

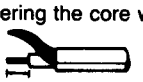


For areas except United Kingdom (FM outdoor antenna)

1. Remove a piece of the outer vinyl sheath from the end.

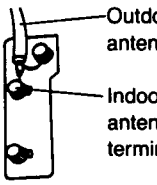
30 mm (1 3/16")

2. Bundle the shield braid, and remove a piece of the inner vinyl sheath covering the core wire.



15 mm (19/32")

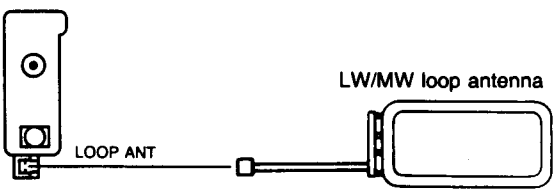
3. Tilt the lever back and inset the core wire and the shield braid.



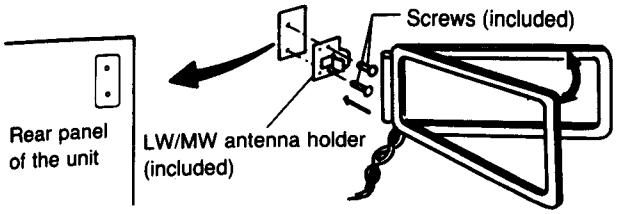
4. Close the lever and pull the cable gently to be sure that it is secured.

2 Connect the LW/MW indoor antenna (included)

Connect the LW/MW loop antenna to the LW/MW antenna terminal and attach it to a column, rack or this unit (facing in the direction of best reception).
If this antenna is not connected, LW/MW broadcasts cannot be received.

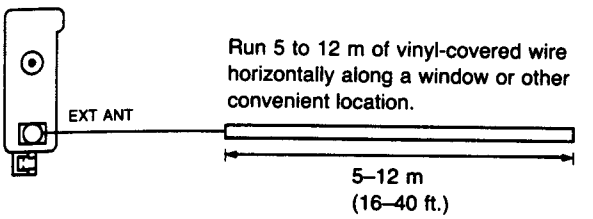


■ How to install the LW/MW loop antenna



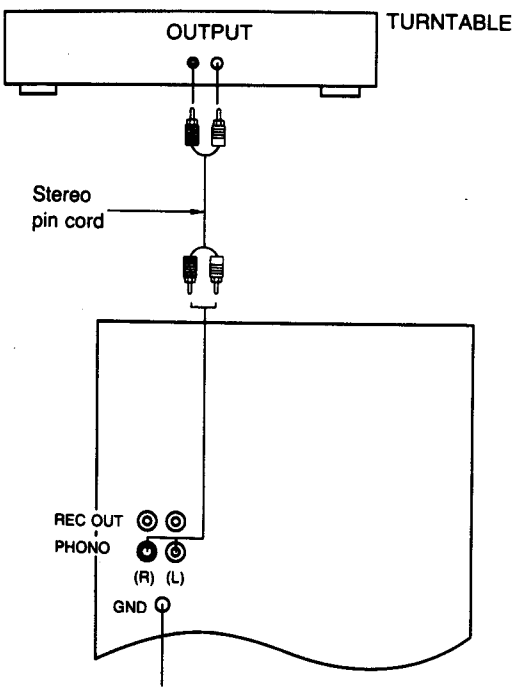
To minimize noise pickup, keep the loop antenna away from the speaker cable, power cord and metal surfaces.

LW/MW outdoor antenna (not included)
An outdoor antenna may be required in a moutainous region, or if this system is located inside a reinforced-concrete building, etc.



3 Connect the external unit.

When using a turntable system, connect the stereo connection cable to the input terminals as shown below.



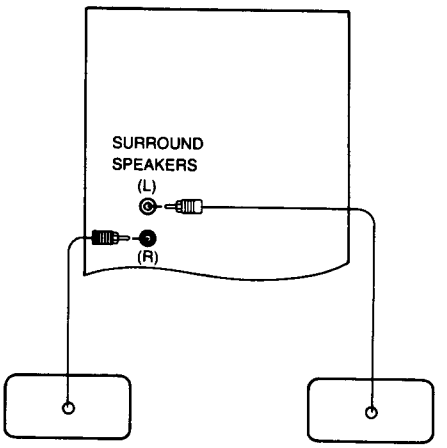
■ "GND" terminal

This terminal is for use with turntables which have a groud wire.

■ "REC OUT" terminal

This terminal is used to connect this system to other cassette deck you have. Source from this system could be recorded through your cassette deck.

■ Surround speakers

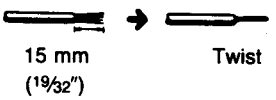


4 Connect the speaker cable.

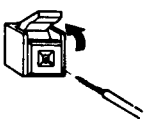
Match the two wires from the left and right speaker cables with the same colored levers of the speaker terminals, then insert the wires into the respective terminals.

Connection of speaker cables

① Pull out the outer covering, and twist the center conductor.



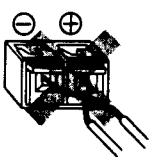
② Tit the lever back and insert the wire.



③ Close the lever and pull the wire gently to be sure that it is secured.

Notes:

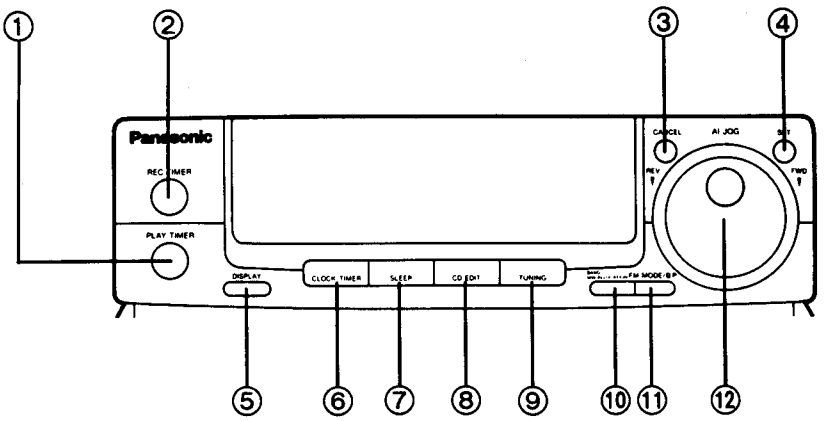
- To prevent damage to circuitry, never short-circuit position (+) and negative (−) speaker wires.
- Be sure to only connect positive (+) wires to positive (+) terminals, and negative (−) wires to negative (−) terminals.



- Connections of speaker cables should be made before connecting the AC power supply cord.

5 Connect the AC power supply cord after all other cables and cords are connected.

Front Panel Controls and Functions



Tuner section

① Timer play button (PLAY TIMER)
This button is used for timer play.

② Timer recording button (REC TIMER)
This button is used for timer recording.

③ Cancel button (CANCEL)
This button is used to cancel the selected contents by using the jog dial.

④ Setting button (SET)

⑤ Display select button (DISPLAY)
This button is used to select the display (mode display, clock or tape counter, etc.).

⑥ Clock/timer button (CLOCK/TIMER)
This button is used to select the desired timer mode or to adjust the clock.

⑦ Sleep timer button (SLEEP)
This button is used when you wish to fall asleep while listening to the music.

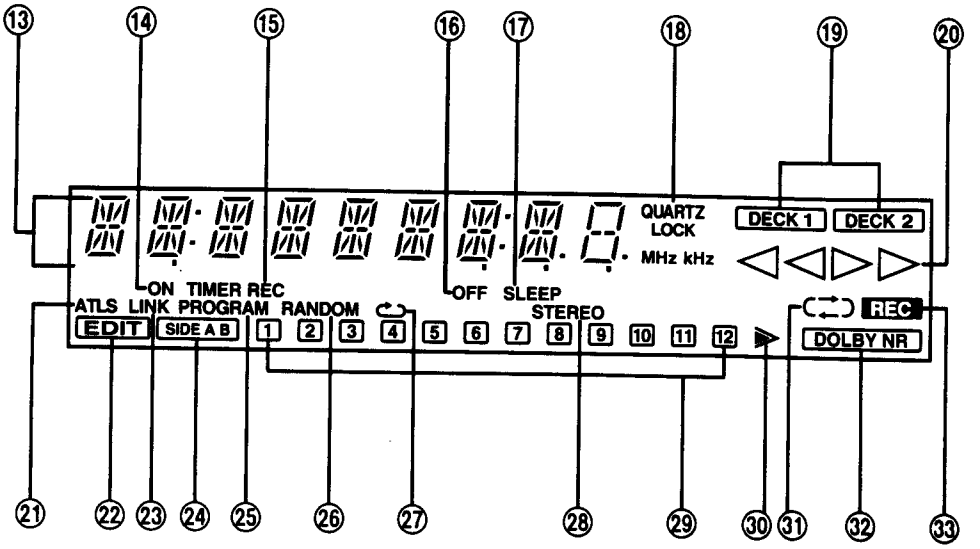
⑧ Compact disc edit-recording mode select button (CD EDIT)
This button is used to select the desired edit-recording mode.

⑨ Tuning mode select button (TUNING)
This button is used to select the desired tuning mode(preset or manual).

⑩ Band select button (-BAND, -MW ALLOCATION)
This button is used to listen to the radio and select the desired radio band.

⑪ FM mode/beat proof button (FM MODE/B.P)
This button is used to select the FM listening mode(stereo or monaural) during the FM broadcast station is received or to reduce the unwanted beat noise during MW/LW broadcast is recorded.

⑫ Jog dial (AI JOG)
This dial is used to select the contents of the mode, etc.



Display section

⑬ Multi-display
This display shows the selected source, present time, tape counter and the contents of the timer setting, received frequencies, compact disc edit-recording mode, etc.

⑭ Timer on time indicator (ON)
This indicator illuminates to show the timer on time.

⑮ Timer recording indicator (TIMER REC)
This indicator illuminates when the timer recording button is pressed.

⑯ Timer off time indicator (OFF)
This indicator illuminates to show the timer off time.

⑰ Sleep timer indicator (SLEEP)
This indicator illuminates when the sleep timer button is pressed.

⑱ Quartz lock indicator (QUARTZ LOCK)
This indicator illuminates when the unit is precisely tuned to a broadcast station.

⑲ Deck 1/2 indicator (DECK 1, DECK 2)
This indicator illuminates to show the operational deck (deck 1 or deck 2.)

⑳ Tape direction indicators (◁◁, ▷▷)
These indicators illuminate to show the direction of tape travel.

㉑ Automatic tape level setting indicator (ATLS)
This indicator illuminates when the ATLS recording is performed.

㉒ Compact disc edit-recording indicator (EDIT)
This indicator illuminates when edit-recording from a compact disc is performed.

㉓ Link indicator (LINK)
This indicator illuminates when the unit is in a condition the disc link is possible.

㉔ Tape side indicator (SIDE A, B)
This indicator shows the tape side (A or B) to be recorded on when the edit-recording of compact disc is performed.

㉕ Program indicator (PROGRAM)
This indicator illuminates during program play.

㉖ Random play indicator (RANDOM)
This indicator illuminates during random play.

㉗ Repeat play indicator ( )
This indicator illuminates during repeat play.

㉘ FM stereo indicator (STEREO)
This indicator automatically illuminates when an FM stereo broadcast is being received. It will not illuminate if the FM mode/beat proof button is used to select monaural mode.

㉙ Track number indicators (1–12)
These indicators show the number of tracks. The number indicate on which side of the tape a given track will be recorded.

㉚ Over indicator ( )
This indicator illuminates if the total number of tracks on the disc is 13 or more.

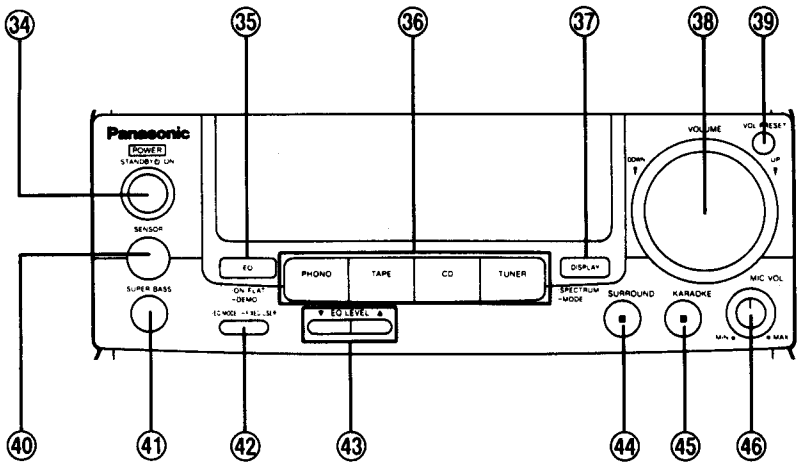
㉛ Reverse mode indicators ( )
Each indicator illuminates to show which of the reverse modes was selected by the reverse mode button.

㉜ Dolby noise reduction indicator (DOLBY NR)
This indicator illuminates when the Dolby noise reduction system is activated.

㉝ Recording indicator (REC)
This indicator illuminates when the recording (recording standby) mode.

Front Panel Controls and Functions

(continued)



Amplifier section

㉞ Power "STANDBY ⏻/ON" switch (POWER STANDBY⏻/ON)

This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the STANDBY ⏻ position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

㉟ Equalizer ON/FLAT button (EQ, -ON/FLAT, –DEMO)

This button is used to switch the equalizer on or flat. If you press and hold this button, sound effects will be sequentially changed (Demonstration function).

㊱ Input select buttons (PHONO, TAPE, CD, TUNER)

These buttons are used to select the sound source to be heard.

㊲ Display mode select button (DISPLAY, -SPECTRUM, –MODE)

This button is used to select one of five spectrum curves. If you press and hold this button, the display mode will change.

㊳ Volume level control (VOLUME)

This control is used to adjust the volume level. Note that -- dB is the lowest volume setting and 0 dB is the highest level setting.

㊴ Volume preset button (VOL. PRESET)

This button is used when making a volume presetting for timer play.

㊵ Remote control signal sensor (SENSOR)

㊶ Super bass button (SUPER BASS)

When this button is pressed, the dynamic low frequency ranges are boosted.

㊷ Equalizer mode select button (-EQ MODE, –FIXED/USER)

This is used to select the equalizer mode. If you press and hold this button, the equalizer mode (FIXED or USER) will be switched.

㊸ Equalizer level-control buttons (EQ LEVEL)

These buttons are used to adjust of the equalization level.

㊹ Surround button (SURROUND)

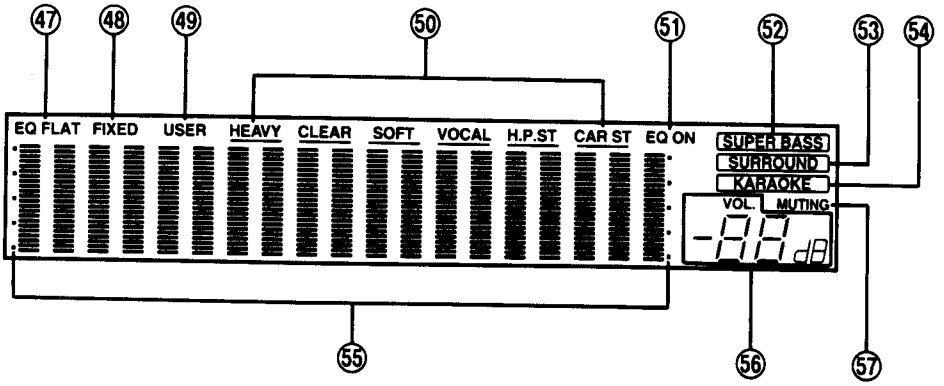
This button is used to activate the surround sound effect.

㊺ Karaoke button (KARAOKE)

This button is used to perform "karaoke" (making microphone mixing with an accompaniment).

㊻ Microphone volume control (MIC VOL.)

This control is used to adjust the microphone volume level.



Display section

㊼ Equalizer flat indicator (EQ FLAT)
This indicator illuminates when the equalizer function is turned off.

㊽ Fixed indicator (FIXED)
This indicator illuminates when the pre-programmed equalization curve is selected.

㊾ User indicator (USER)
This indicator illuminates when the "USER" mode equalization curve is selected.

㊿ Equalization mode indicators (HEAVY~CAR ST)
These indicators show which of the six equalization curves is currently used.

(51) Equalizer on indicator (EQ ON)
This indicator illuminates when the equalizer function is turned on.

(52) Super bass indicator (SUPER BASS)
This indicator illuminates when the super bass mode is activated.

(53) Surround indicator (SURROUND)
This indicator illuminates when the surround effect is activated.

(54) KARAOKE indicator (KARAOKE)
This indicator illuminates when KARAOKE mode is activated.

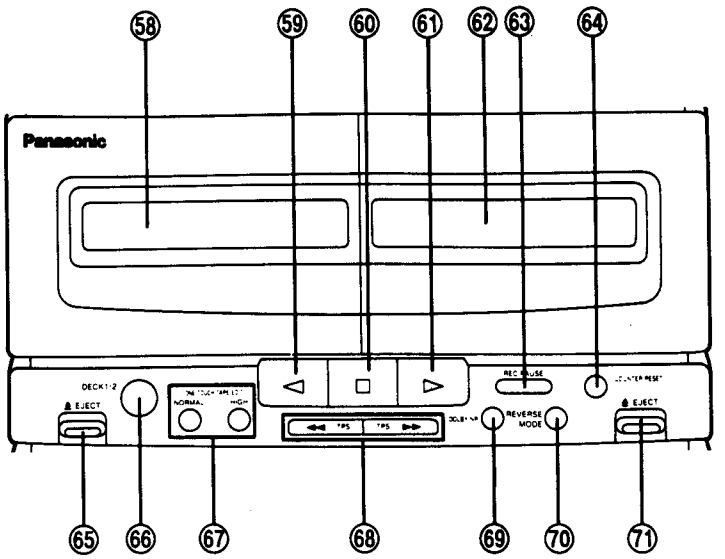
(55) Equalization/spectrum analysis level display
This display shows the equalization/spectrum analysis level.

(56) Volume level display
This display shows the volume level.

(57) Muting indicator (MUTING)
This indicator illuminates when the muting mode is activated.

Front Panel Controls and Functions

(continued)



Cassette deck section

58 Deck 1 cassette holder

59 Reverse-side playback button (◁)
This button is used to start the playback or recording (deck 2) to the reverse direction.

60 Stop button (□)
This button is used to stop the tape.

61 Forward-side playback button (▷)
This button is used to start the playback or recording (deck 2) to the forward direction.

62 Deck 2 cassette holder

63 Record/record standby button (REC PAUSE)
This button is used to put deck 2 into the record standby mode.

64 Tape counter reset button (COUNTER RESET)
This button is used to reset the tape counter indicator to "000".

65 Deck 1 cassette eject button (▲ EJECT)
This button is used to open the cassette holder.

66 Deck 1/2 select button (DECK 1/2)
This button is used to select the deck to be operated.

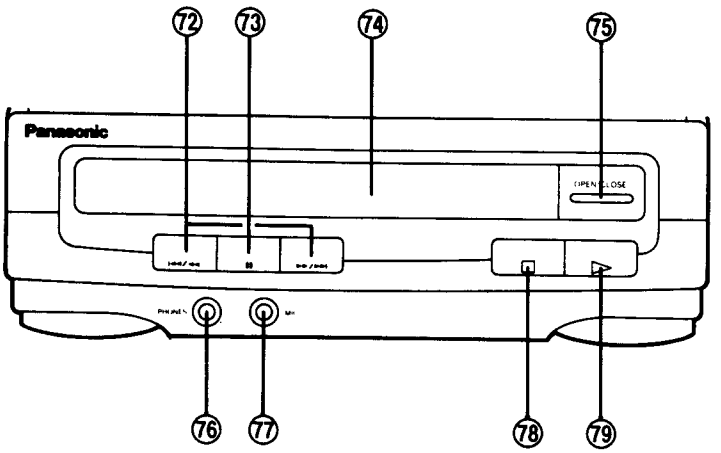
67 One touch tape edit buttons (ONE TOUCH TAPE EDIT)
These buttons are used to start the tape-to-tape recording.

68 Fast-forward/rewind/tape program sensor buttons [◂◂ (TPS), (TPS) ▸▸]
These buttons are used to advance or rewind the tape, or to quickly search for the beginning of a tune while the tape is being played.

69 Dolby noise reduction button (DOLBY NR)
This button is used to reduce the hissing noise heard from the tape. This unit is provided with Dolby B-type noise reduction system.

70 Reverse mode select button (REVERSE MODE)
This button is used to select the reverse mode (for playback and recording).

71 Deck 2 cassette eject button (▲ EJECT)



Compact disc player section

⑫ Skip/search buttons
(⏮/◀◀ , ▶▶/⏭)

⑬ Pause button (⏸)
This button is used to stop the disc play temporarily.

⑭ Disc cover

⑮ Disc tray open/close button (OPEN/CLOSE)

⑯ Headphones jack (PHONES)

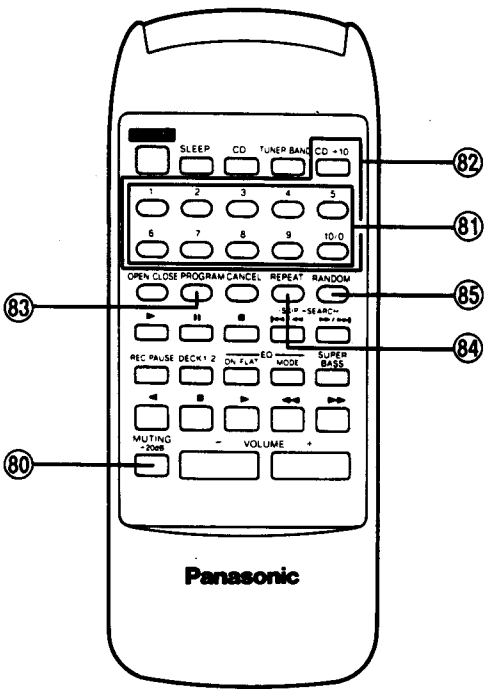
⑰ Microphone jack (MIC)

⑱ Stop button (□)
This button is used to stop the disc play.

⑲ Play button (▷)
This button is used to start playing the disc.

Front Panel Controls and Functions

(continued)



Remote control section

■ Common operation controls

The function description of buttons ㉞, ㉟, ㊱, ㊳, ㊶ and ㊷ is as described under "Amplifier section" on page 10.

㊵ Muting button (MUTING −20 dB)

This button is used to temporarily attenuate the volume level.

■ Tuner section

The function description of button ③, ⑦ is as described under "Tuner section" on page 8.

㊶ Preset-tuning buttons (1–10/0)

These buttons are used to select the preset channel of the tuner.

■ Compact disc section

The function description of buttons ㉜, ㉝, ㉕, ㉘ and ㉙ is as described under "Compact disc section" on page 13.

㊷ Numeric buttons (1–10/0, +10)

These buttons are used to specify the compact disc's track.

㊸ Program button (PROGRAM)

This button is used to perfrom the prgram play.

㊹ Repeat button (REPEAT)

This button is used to activate the repeat mode.

㊺ Random button (RANDOM)

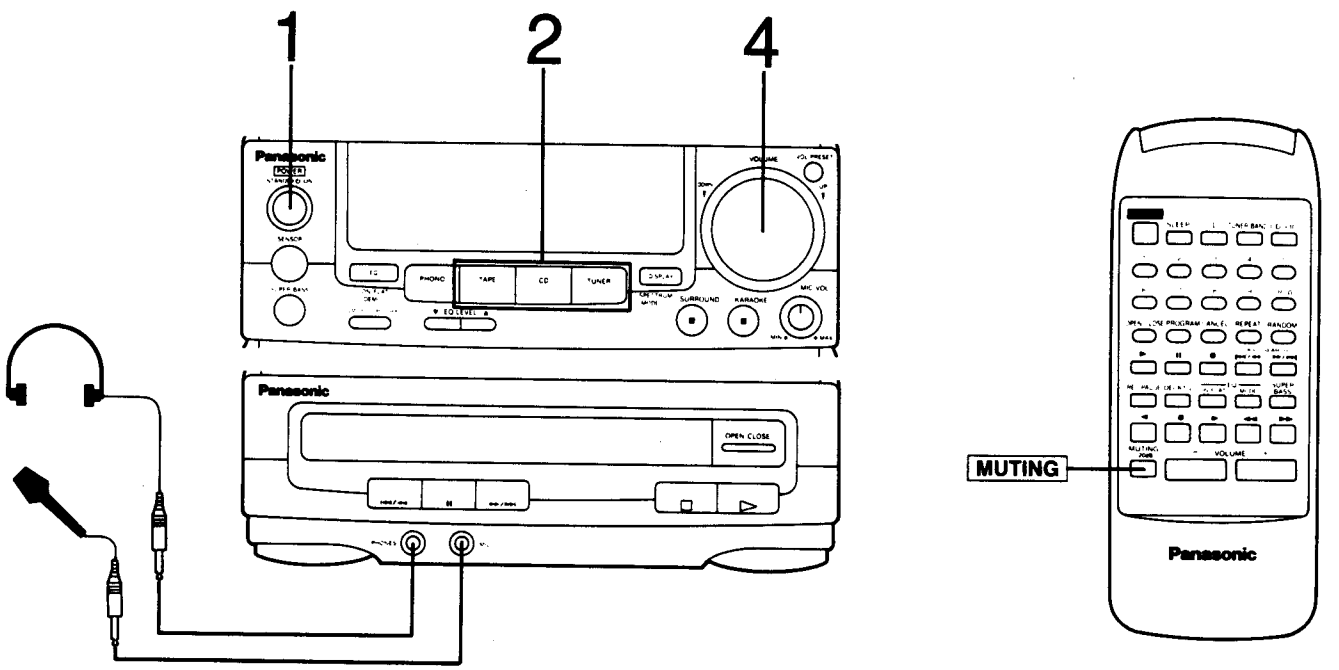
This button is used to play all the tracks at random on the disc.

■ Cassette deck section

The function description of button ㊾, ㊿, ㊶, ㊸, ㊻ and ㊽ is as described under "Cassette deck section on page 12.

Basic Operating Procedure

These functions are also available from the remote control. Follow the procedure described below.



1 Press the power "STANDBY⏻/ON" switch to switch on the power.

2 Press the input select button to select the desired sound source.

The display of the selected mode will appear.

TAPE: Press this button to listen to tapes (See page 24).

CD: Press this button to listen to compact discs. The compact disc or tape will automatically stop when a different sound mode is selected during its operation (See page 17–23).

TUNER: Press this button to listen to radio broadcasts (See page 28).

3 Start the sound source.

4 Adjust the volume level.

After listening is finished

Be sure to reduce the volume level and switch the unit to the standby mode using its operation button or an "OFF/ON" switch on the remote control.

Note:

The sound source and equalizer settings will be retained (as they were the time when the power is switched to standby mode) by the memory back-up function.

To temporarily reduce the volume level

MUTING

Press the muting button on the remote control.

The volume level is attenuated by 20 dB (approx. 1/10).

The muted state can be cancelled by pressing the muting button once again or reduce the volume level to the minimum position.

How to use a microphone

Connect the microphone (not included) to the MIC jack after reducing the volume level.

If strange noises (squealing or howling) are emitted during mixing, change the direction of the microphone or turn down the volulme. It is possible to record a singing voice accompanying the tuner, or CD. Follow the instructions for "Making a Recording" on page 31 and "Using the KARAOKE function" on page 51.

- Plulg type: Monaural mini

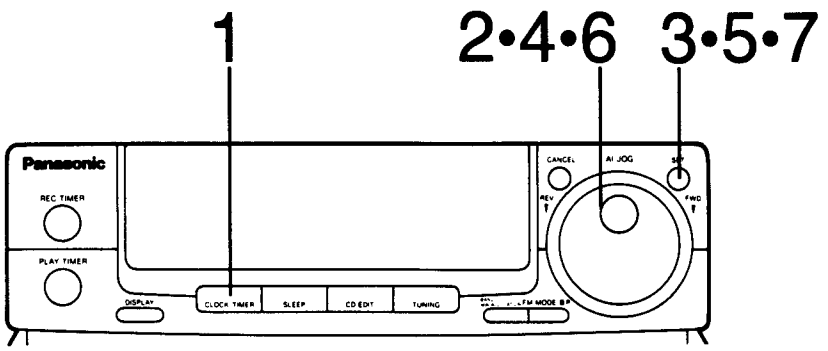
How to use headphones

Connect the headphones (not included) to the PHONES jack after reducing the volulme level.

The speakers are automatically cut off when the headphones are connected.

- When using headphones, avoid listening to excessive volume levels for extended time periods.
- Plug type: Stereo mini

Setting the Time

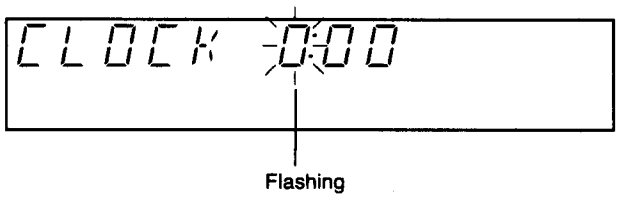


For example:
To set the time at 16:20 (4:20 PM)

1 Press the clock/timer button.

2 Turn the jog dial to select the "CLOCK" mode.
The display will change to "P-TIMER"–"R-TIMER"–"SLEEP"–"CLOCK".
- The display will return to what was previously indicated if 10 or more seconds are allowed to elapse before the next operation is accomplished.

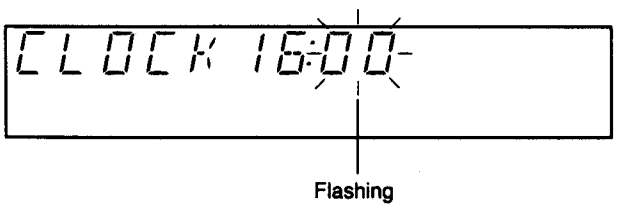
3 Press the setting button.



Flashing

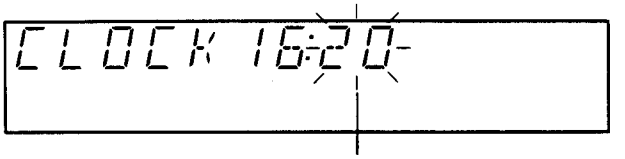
4 Turn the jog dial to adjust the correct hour display.
FWD: Increase.
REV: Decrease.

5 Press the setting button.



Flashing

6 Turn the jog dial to adjust the correct minute display.
Note that the minute "00" display appears following "59", but the hour display is not changed.

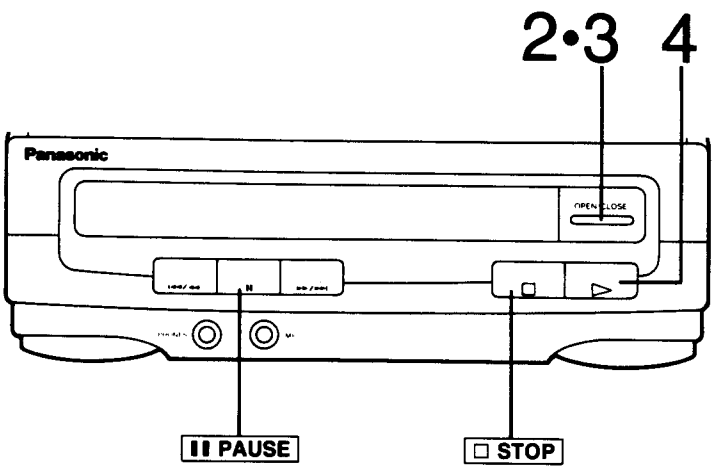


Flashing

7 Press the setting button to finish setting the time.
The display will change to the previous display.
- When the minute display is set correctly and the setting button is pressed, the clock is reset to "0" second.
- The display will return to the previous indication after one second later.

Note:
- "E" appears on the display when the power cord is connected or electricity failure. Set the time once again.

Listening to Compact Discs



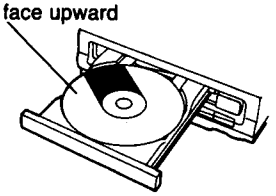
Sequential play

Have you switched on the power?
Steps 3, 4 can be operated using the remote control with the procedure below.

1 **Press the input select button marded "CD".**

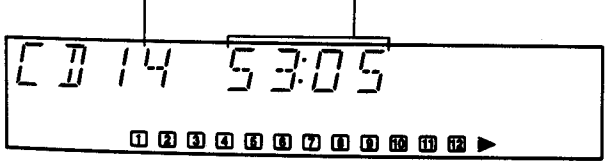
2 **Press the disc tray open/close button to open the disc tray and then insert the disc.**

Label must face upward



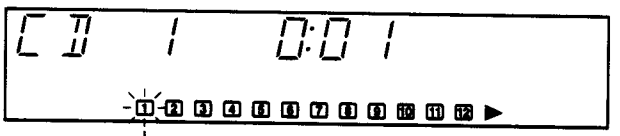
3 **Press the disc tray open/close button to close the disc tray.**
When the disc holder is closed, the disc rotates, and the total number of tracks and total playing time both appear on the display panel.
- Do not stick your finger through the hole in the middle of the disc holder. (It could get caught when the holder closes.)

Total number of tracks Total playing time



- When there are more than 13 tracks on the disc, the "▶" mark will be displayed.

4 **Press the play button.**
Disc play begins from the first track on the disc.
- The number of the track being played will flash, and go out at the end of that track.



The track number currently played flashes
- The disc play stops automatically when the last track on the disc finishes playing. (The display returns to the total number of tracks and total playing time indications).
- The step can be skipped by pressing the play button after inserting a disc, in this case, the tray will close and play will strat directly from the track 1, but the tracks and total playing time will not be displayed.

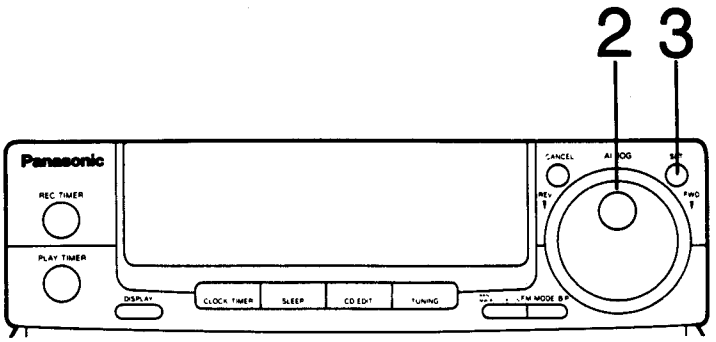
■ To temporarily stop the disc play
This function is also available from the remote control. Follow the procedure below.

PAUSE
Press the pause button.
The track number display and the elapsed time will start flashing.
- Press the play button to play again.

■ To stop play
This function is also available from the remote control. Follow the procedure below.

STOP
Press the stop button in the compact disc section.
The unit switches to the stop mode and the total number of tracks and total playing time are displayed.

Listening to Compact Discs (continued)



Program play

This function allows you to program up to 36 tracks on the disc in any order you choose.

■ From the main unit

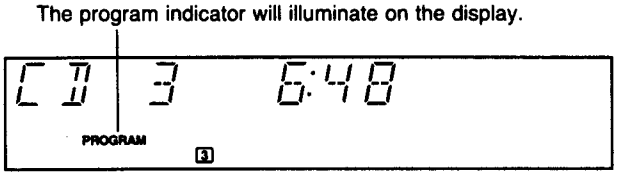
1 Press the input select button marked "CD".

2 Turn the jog dial to select the desired track to be played.

The display will return to what was previously indicated if 8 seconds are allowed to elapse before the next operation is accomplished.In that case,repeat this step.

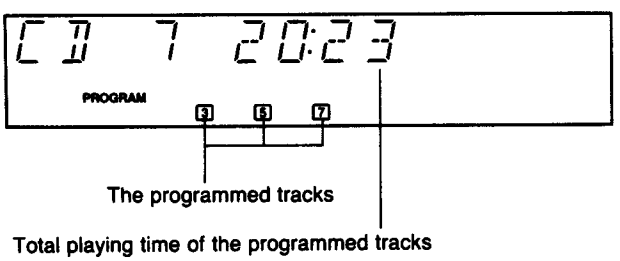
3 Press the setting button.

The program indicator will illuminate on the display.



The programmed order will be indicated for about 1 second and then the whole play time will be displayed.

Repeat the above steps 2 and 3 to memorize a track in sequence.

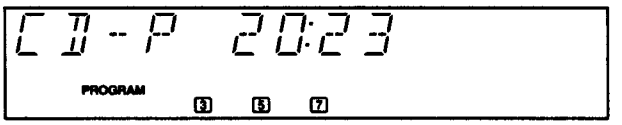


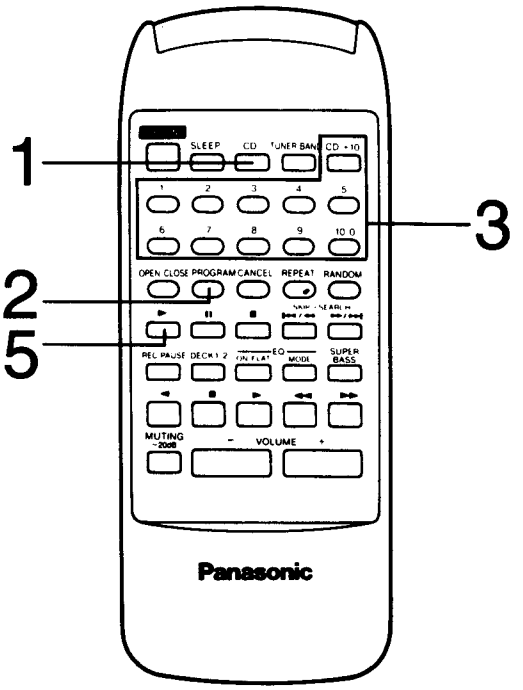
4 Press the play button in the compact disc player section.

The program play will begin from the first track you entered.

■ Program memory function

The programmed tracks will be retained until the program play mode is cancelled by opening the compact disc tray or cancelled with the cancel button (See page 20). The programmed tracks is maintained for as long as approximately 2 weeks even in the condition the power cord is disconnected.

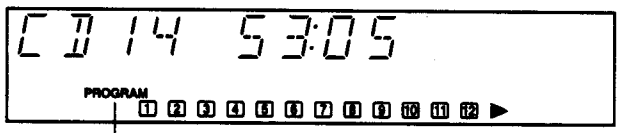




■ From the remote control

1 Press the input select button marked "CD".

2 Press the program button.
The program indicator will illuminate.



Program indicator

3 Press the numeric buttons to select the track numbers.

To select a specific track

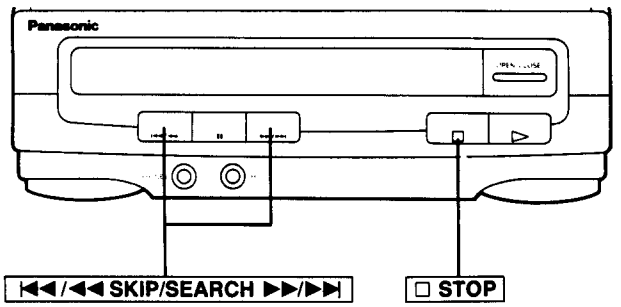
Tracks 1–10:
Press the appropriate numeric button 1–10/0 directly.
Tracks 11 and up:
First press the "+10" button and then one of the "1" to "10/0" buttons.
Track no. 13: [+10]–[3].
Track no. 20: [+10]–[+10]–[10/0].
Track no. 35: [+10]–[+10]–[+10]–[5].

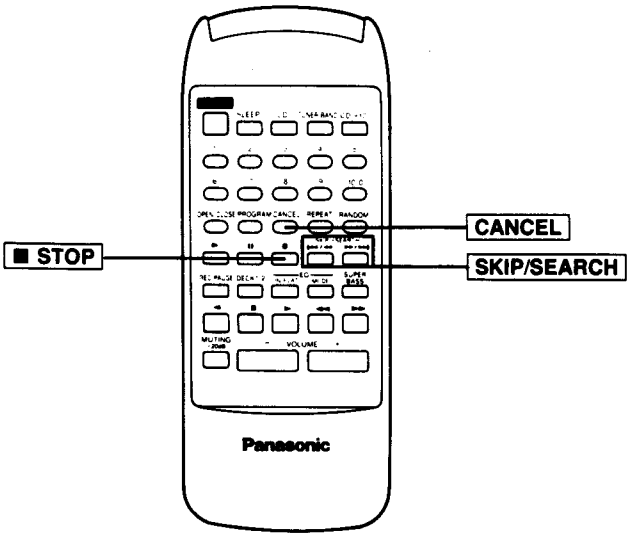
Notes:
- "ERROR" appears on the track display when a nonexistent track is programmed.
- "FULL" appears on the track display when tracks more than 36 have been programmed, to indicate that tracks more than 36 cannot be programmed.
- "--:--" appears on the time display when the total play time of the programmed tracks exceeds 99 min, and the total time is not displayed.

4 Repeat step 3 until the desired program is completed.

5 Press the play button.
The program play will begin.

Listening to Compact Discs (continued)





Program play

■ To stop the program play

This function is also available from the remote control. Follow the procedure described below.

STOP

Press the stop button.

(Play will stop and the program will be retained.)

■ To confirm the program

This function is also available from the remote control. Follow the procedure described below.

SKIP/SEARCH

Press the skip/search button.

Each time the skip/search button is pressed, the next track in the program sequence is displayed.

■ To cancel program play

1) Press the program button on the remote control in the stop mode.
   (The program indicator will start flashing for several seconds.)
2) Press the cancel button during the program indicator flashing.
   (The program indicator goes out and the program is cleared.)

■ To cancel only the programmed track

This function is also available from the remote control. Follow the procedure described below.

CANCEL

Press the cancel button (main unit or remote control) in the stop mode.

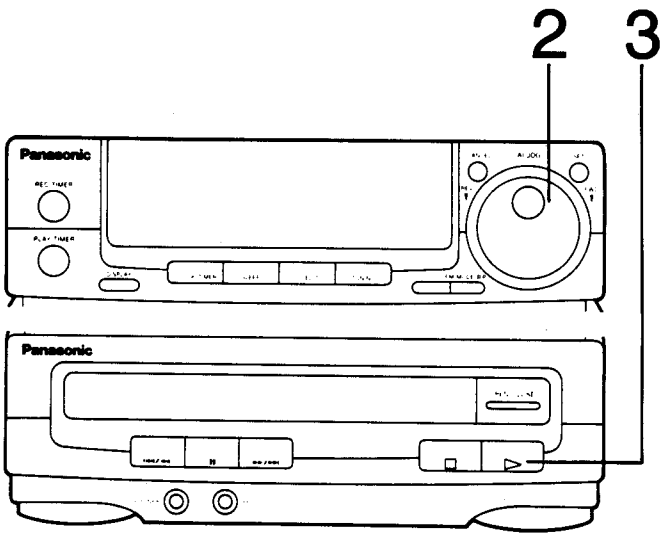
Each time the cancel button is pressed, the last track in the programmed sequence will be cancelled.

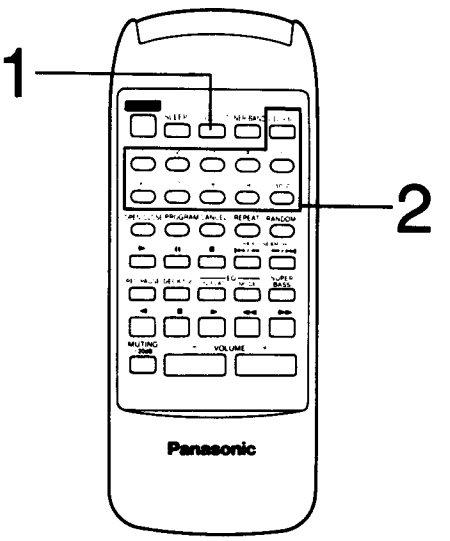
Example:

When programs 3, 5 and 7 have been programmed, the tracks will be cancelled in the sequence of 7, 5 and 3 each time the cancel button is pressed.

Note:

It is not possible to clear the track located in the middle of the program (such as the third of 5 tracks).





Direct access play

To start sequential play from a specific track to the end and then the disc is automatically stop.

■ From the main unit

1 **Press the input select button marked "CD".**

2 **Turn the jog dial to select the desired track.**

3 **Press the play button.**

■ From the remote control

1 **Press the input select button marked "CD".**

2 **Press the numeric button corresponding to the desired track number.**

To select a specific track

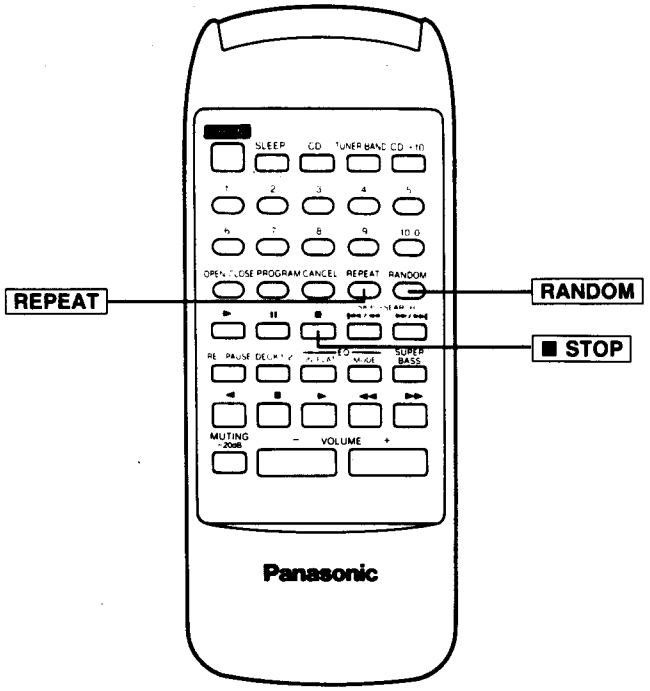
Tracks 1–10:
Press the appropriate numeric button 1–10/0 directly.
Tracks 11 and up:
First press the "+10" button and then one of the "1" to "10/0" buttons.

Track no. 13: [+10]–[3].
Track no. 20: [+10]–[+10]–[10/0].
Track no. 35: [+10]–[+10]–[+10]–[5].

Play will start.

Note:
Direct access play is not possible in the programmed play mode. (Tracks are added onto the programmed tracks.) Release the program mode function first and then proceed to operate.

Listening to Compact Discs (continued)

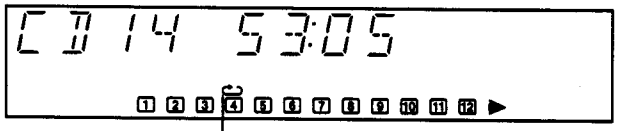


Repeat play

This function repeats the play of all tracks.

REPEAT

Press the repeat button before or during play.



Repeat indicator will illuminate.

- While program play is taking place, only the programmed tracks will be played repeatedly.
- You can enjoy the same track repeatedly if only one track is programmed.

■ To cancel repeat play

REPEAT

Press the repeat button once again to go out the repeat indicator.

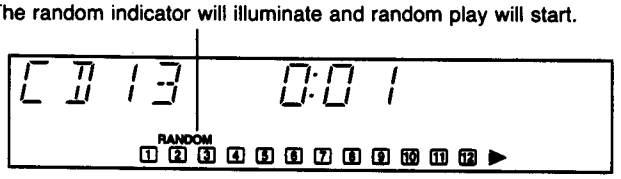
Random play

The microcomputer will automatically select the sequence of tracks to be played in exclusively random manner.

RANDOM

Press the random button on the remote control in the stop mode.

The random indicator will illuminate and random play will start.



■ To stop the play

STOP

Press the stop button.

(Also the random play mode is cancelled.)

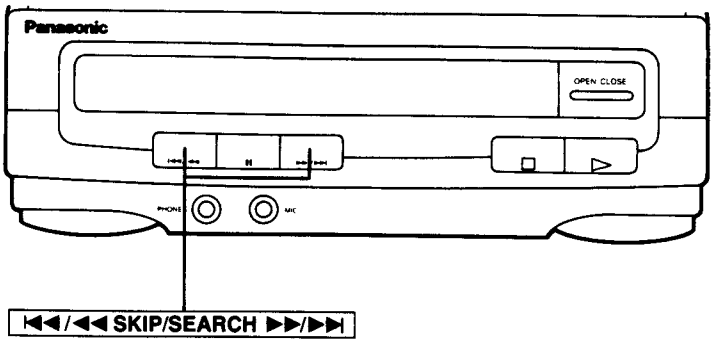
■ To cancel the random play

RANDOM

Press the random play button once again to go out the random indicator.

Note:

The random play function cannot be used in combination with the program play mode.



Skip play

This function is also available from the remote control. Follow the procedure described below.

SKIP

Press the forward or backward skip button momentarily until the desired track has been located.

: Pickup skips forward.
The pickup will skip as many tracks as the number of times the button is pressed.

: Pickup skips backward.
Pressing this button once will cause the pickup move to the beginning of the track being played.

- If the button is pressed repetitively, the pickup will skip a number of tracks equal to the number of times that the button is pressed.
- If these buttons are pressed during program play, the pickup will skip from one track to another in the programmed sequence.

Pickup:
The pickup is a laser device that reads the information on the disc surface. The pickup moves across the disc as the disc is played, but it is not visible from outside the cabinet.

Note:
During random play, the pickup skips backward to the beginning of the current track, not to skip to the previous track.

Search play

This function is also available from the remote control. Follow the procedure described below.

SEARCH

While watching the track and time displays, press and hold one of the search buttons. Release the button when the desired point has been reached.

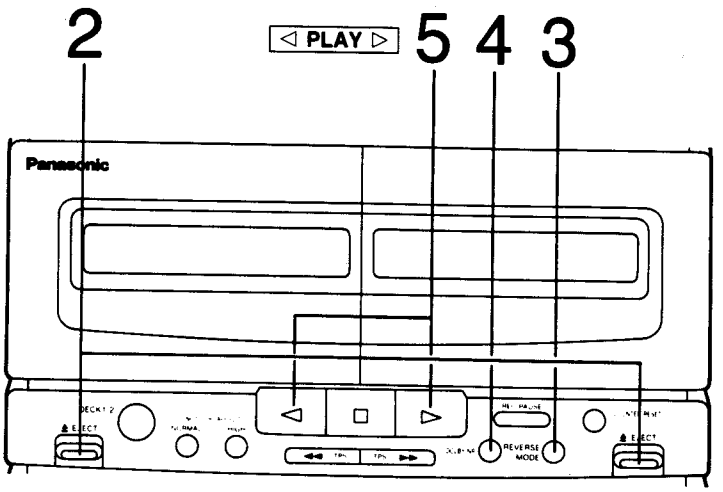
: Pickup moves forward.

: Pickup moves backward

- At first, the pickup will move slowly, then, if the button is kept depressed, will move quickly.
- The volume level will drop to about 1/4 of normal.
- During program play and random play, a search will take place within the track being played.

Listening to Tapes

Either tape deck 1 or tape deck 2 can be used for tape playback by following the same steps. (This page shows an example using deck 1.)



Have you switched on the power?

Step 5 can be operated using the remote control with the procedure below.

1 Press the input select button marked "TAPE".

2 Press the eject button, and then insert the cassette tape to be used for playback.

- The part of the cassette tape where the tape is exposed should face down-ward.
- Either normal, chrome or metal type cassette tape can be used.
- To reset the tape counter (000), first press the deck 1/2 select button to select the deck and press the counter reset button.
- While the reverse side of the tape is being played back, the counter will count back. (000–999–998–)...

3 Press the reverse mode select button to select the appropriate reverse mode.

Each time the reverse mode select button is pressed, one of the three reverse mode indicators will be alternately displayed.

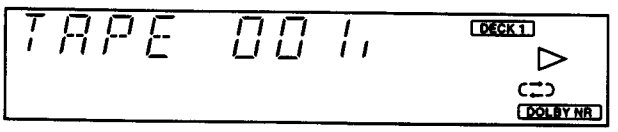
- : One side only will be played, and then the tape will automatically stop.
- : Both sides will be played, and then the tape will automatically stop.
  If playback is started from the reverse side, only one side playback will be performed.
- : **When a tape is loaded into only deck 1 or 2**
  Playback will be repeated until the stop button is pressed.
  When tapes are loaded into both decks
  Both sides (from forward side to reverse side) of the tape in deck 1 are played first, and then both sides of the tape in deck 2.
  This playback will continue until the stop button is pressed.

4 Press the Dolby noise reduction button to set the Dolby noise reduction in which the tape was recorded.

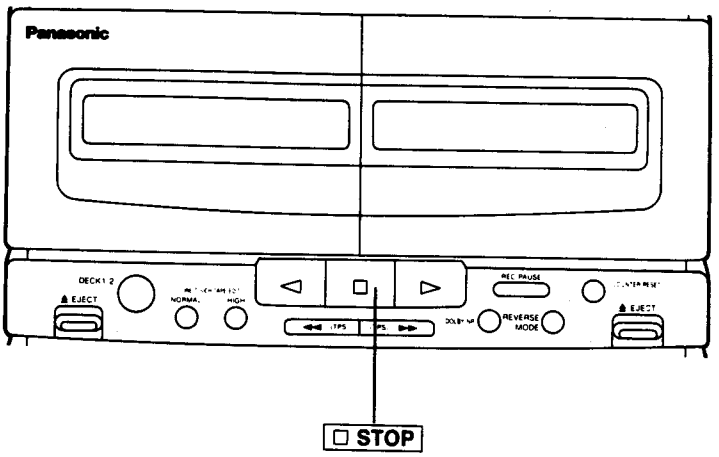
The Dolby noise reduction indicator will illuminate.
If the tape was not recorded in a Dolby NR mode, press the Dolby noise reduction button again to go out the Dolby NR indicator.

5 Press the playback button to start playback.

- : The forward side (front side) will be played.
- : The reverse side will be played.



- When the tapes are loaded in both decks, press the deck 1/2 select button to select the deck to be used.
- Tape direction can be reversed manually during playback by pressing the opposite of the playback button.



■ To stop the tape playback

This function is also available from the remote control. Follow the procedure described below.

STOP

Press the stop button.

■ Auto tape selector function

This function automatically identifies the kind of tape loaded (normal, chrome, or metal), and sets the bias (for recording) and equalization accordingly.

■ Full auto-stop

When the tape reaches its end, the tape movement will automatically stop. However, if the reverse mode select button is set to ⊂⇄⊃ in playback condition, the auto-stop function will not operate.

■ About the Dolby NR system

This is a system intended to reduce hiss noise in the high frequency range. It raises the level of the high frequency components during recording, and lowers it by the same amount during playback.

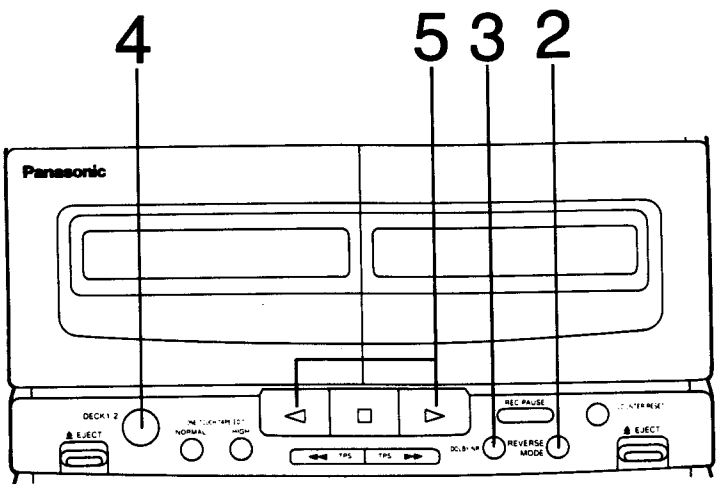
This unit includes the Dolby B NR-type of Dolby noise-reduction system.

B type: Noise is reduced to about 1/3. Use this mode when playing a tape in the Dolby NR mode.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

Listening to Tapes (continued)



Listening to two tapes consecutively

Step 4 and 5 can be operated from the remote control. Follow the procedure described below.

1 Load tapes in decks 1 and 2.

Be sure that the side that you wish to start to listen to is facing you, and load it in deck 1.

2 Press the reverse mode button to set the " ⇄ " mode.

3 Press the Dolby noise reduction button to set the Dolby noise reduction in which the tape was recorded.

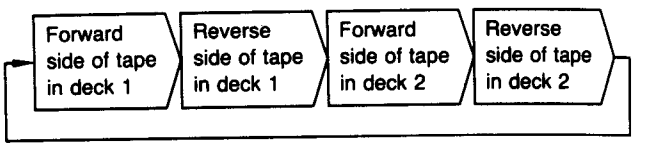
The Dolby noise reduction indicator will illuminate.
If the tape was not recorded in a Dolby NR mode, press the Dolby noise reduction button again to go out the Dolby NR indicator.

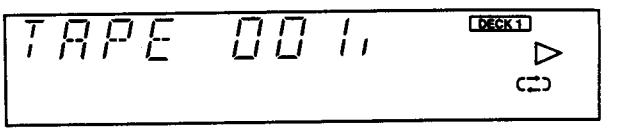
4 Press the deck1/2 button to select deck 1.

The deck 1 indicator will illuminate.

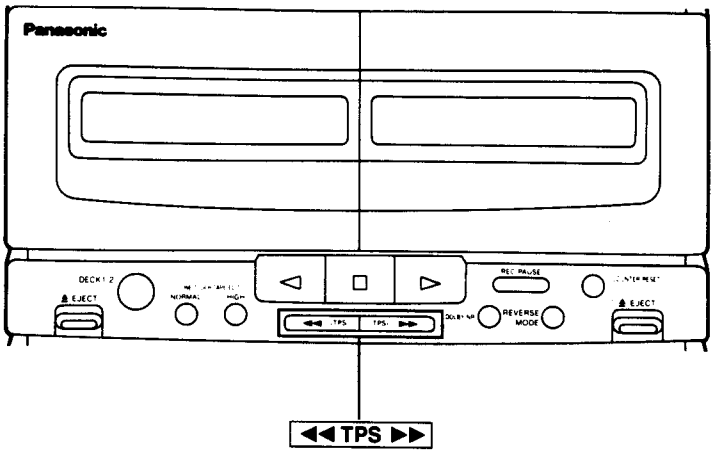
5 Press the playback button to start playback.

Two tapes will be played back as follows:





- To stop the tape mid-way, press the stop button of the deck in which the tape is currently playing.
- You can also start playback from a position other than the forward side of the tape in deck 1.
- When loading the tapes to both decks, the deck 1/2 indicator will show the deck the tape is loaded last.
- When the power is switched on, the deck 2 indicator will always illuminate.



To find the beginning of a program (TPS: tape program sensor)

This function is also available from the remote control. Follow the procedure described below.

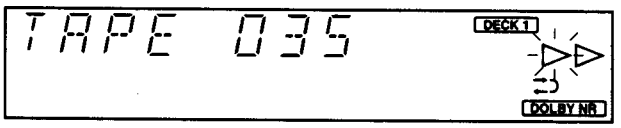
TPS

Press the fast-forward/rewind/tape program sensor button.

When the forward side (▷) is being played:

▶▶ .....The tape will be played from the beginning of the next program.

◀◀ .....The tape will be rewound to the beginning of the present program, then the program will be played again.



While a TPS operation is taking place, the play indicator will flash.

When the reverse side is being played;

The reverse operation should be taken place.

Note:

The TPS function may sometimes fail to operate correctly in the following cases:

- When the interval between program (the non-recorded part) is less than 4 seconds.
- When a tape has been recorded with fade-ins and fade-outs.
- When there is a particularly low level passage or silent passage in the middle of a program.
- When a tape recorded from a microphone is being played back (and there are no unrecorded blanks between the tape programs).
- When less than 10 seconds remain until the start of the present program or start of the next program.

To fast forward or rewind the tape

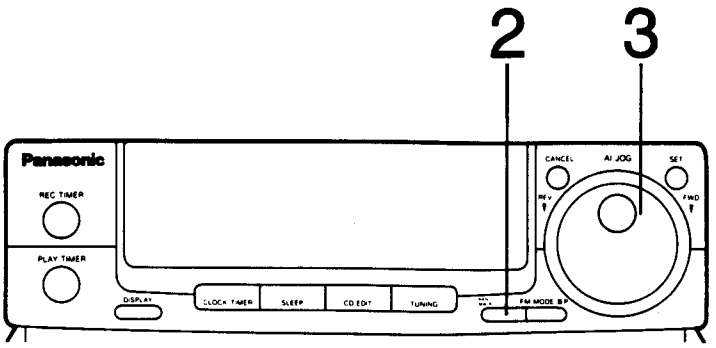
TPS

Press the fast-forward/rewind/tape program sensor button.

If one of these buttons are pressed when the tape is stationary, the tape will start moving at high speed in the direction of the arrow (◀◀, ▶▶), regardless of which side is being played back.

To fast forward or rewind the tape while another deck is used to playback, press the deck 1/2 button to switch the deck to be used and then press the fast forward or rewind button.

Listening to Radio Broadcasts



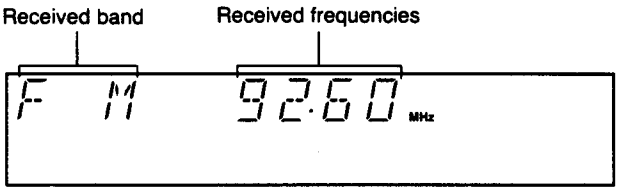
Manual tuner operation

(to listen to broadcasts by using the jog dial)

Have you switched on the power?

1 **Press the input select button marked "TUNER".**

2 **Press the band-select button to select the desired band (FM/MW/LW).**

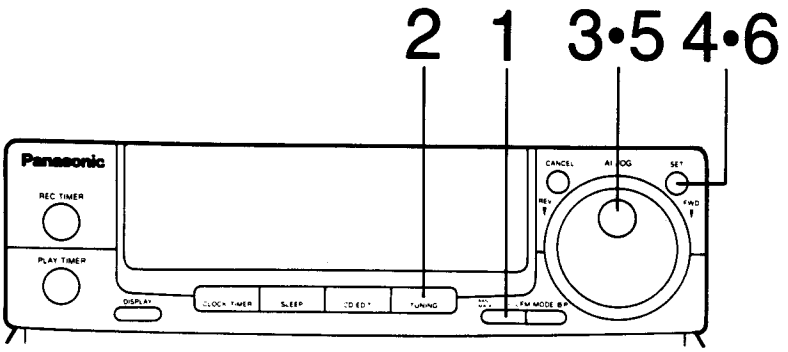


3 **Turn the jog dial so as to tune to the desired broadcast.**

If the FM stereo broadcasts is received, the FM stereo indicator will illuminate.

■ MW allocation

When the band select button is pressed for about 3 seconds, the MW frequency step will change to 9 or 10 kHz per step.
In order to return to the original frequency indication, press this button for about 3 seconds again.



Memory presetting

When broadcast frequencies have been preset to the memory, any of those broadcast frequencies can thereafter be easily selected by simply pressing one of the preset-tuning buttons on the remote control or using the jog dial.

You can memorize up to 30 radio stations (10 in FM; 10 in MW; 10 in LW), into the units preset memory.
(When a new frequency is memorized in a channel, the frequency previously memorized in that channel will be cancelled.)

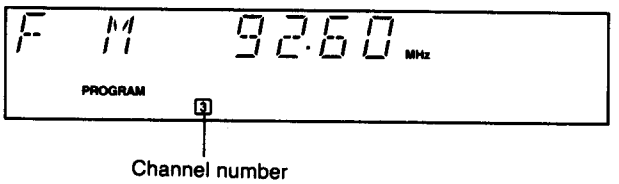
1 **Press the band-select button to select the desired band (FM/MW/LW).**

2 **Press the tuning mode button to select the "MANUAL".**
Every time this button is pressed, each "MANUAL" and "PRESET" modes is selected in succession.

3 **Tune in your favorite station using the jog dial.**
Turn the jog dial till the correct frequency and the quartz lock indicator will illuminate.

4 **Press the setting button to flash the program indicator.**
The program indicator will flash for about 10 seconds.

5 **Turn the jog dial to select the desired preset channel while the program indicator is flashing.**
↷ : The channel number will increase from 1 to 10.
↶ : The channel number will decrease from 10 to 1.

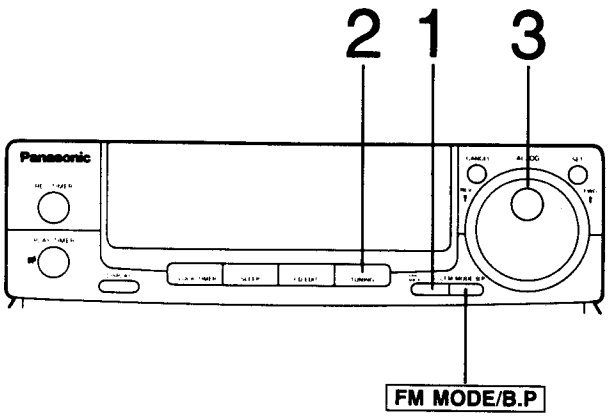


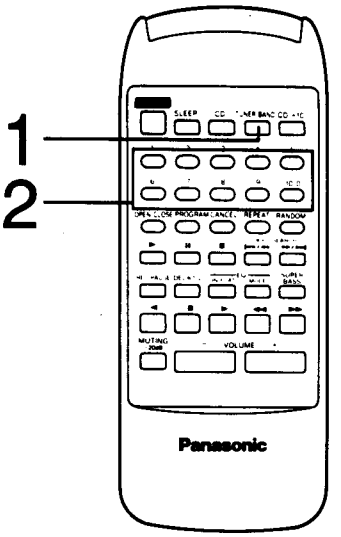
Channel number

6 **Press the setting button.**
The program indicator will stop flashing.

7 **Repeat the above steps 3-6 to memorize a station in each of the remained preset channels.**

Listening to Radio Broadcasts (continued)





Memory tuner operation

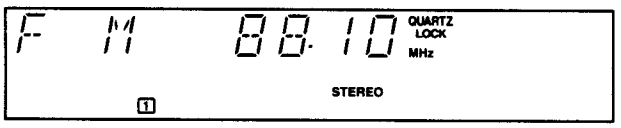
(to listen to broadcast stations preset into memory)

Have you switched on the power, and performed the steps of "Memory presetting" on page 29?

■ From the main unit

1 Press the band-select button to select the desired band (FM/MW/LW).

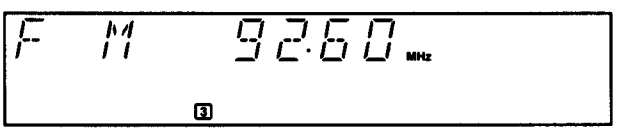
Each time you press the band-select button, FM/MW and LW indicator will be alternately displayed.



2 Press the tuning mode button to select "PRESET".

3 Turn the jog dial to select the desired preset channel.

The selected preset channel will illuminate



■ If noise is excessive in the FM mode

FM MODE/B.P

Press the FM mode/beat proof button to monaural position.

The "FM stereo" indicator will go out.

The sound will then be heard in monaural and the FM stereo indicator will not illuminate; If the broadcast signal is weak, or if there is a large amount of interference, sounds can be heard more clearly.

■ From the remote control

1 Press the band-select button to select desired band (FM/MW/LW).

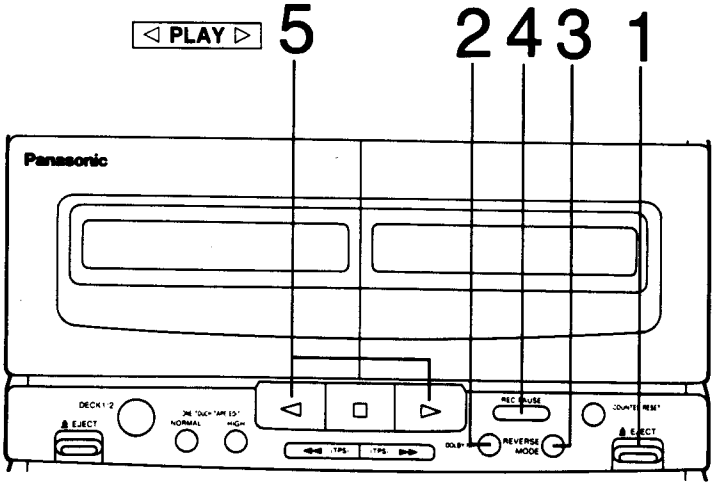
2 Press the preset-tuning button to select the desired preset channel.

■ Most recent memory

The most recent memory system "remembers" the broadcast station last tuned to when the power is switched to standby mode or other functions are selected. The last tuned station will be heard when the unit is switched "ON" or the tuner function is selected.

- Memory presetting's is maintained for as long as approximately 2 weeks even in the condition the power cord is disconnected.

Making a Recording (Deck 2 only)



To record the desired source

Although you can record a compact disc using the following procedure, it is recommended that you use the handy compact disc edit-recording procedure to record a compact disc. (See page 34~40.)

- To make a tape-to-tape recording, see "Tape-to-Tape Recording" on page 41.

Steps 4, 5 can be operated using the remote control with the procedure below.

1 Press the deck 2 eject button to load a tape in deck 2.

You cannot record on the leader tape, so take up the leader tape in advance.

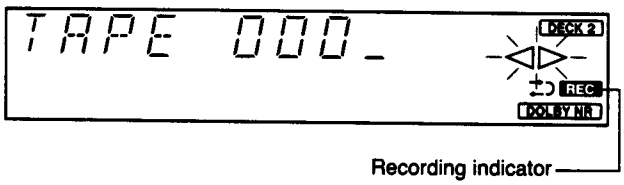
2 When making a Dolby NR recording, press the Dolby noise reduction button to illuminate the Dolby noise reduction indicator.

3 Select the reverse mode using the reverse mode select button.

- : One side will be recorded, then the tape will automatically stop.
- : Both sides will be recorded(forward side-reverse side), then the tape will automatically stop.

4 Press the record/record standby button to put the cassette deck into the recording standby state.

The tape direction indicators will flash to show the direction that can be recorded.



Recording indicator

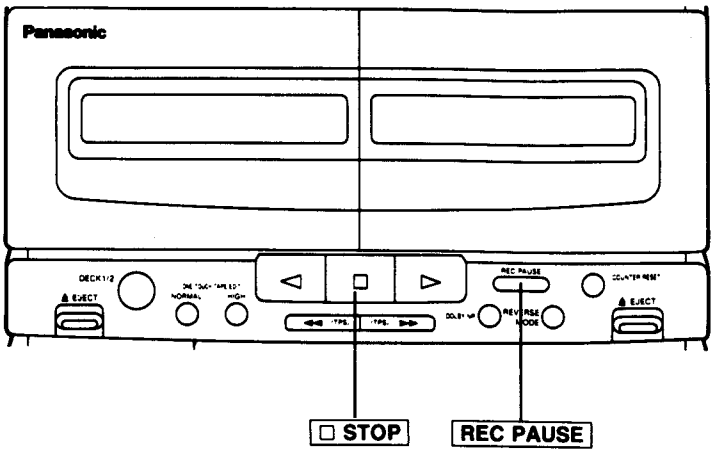
5 Press one of the play buttons to start recording, then start playing the source to be recorded.

- : When recording on either the forward side or both sides.
- : When recording only on the reverse side

■ Synchro start function

When you make a recording from a compact disc, the recording will automatically start when you press the play button on the compact disc player section.

Making a Recording (continued)



■ To briefly interrupt recording

This function is also available from the remote control. Follow the procedure described below.

REC PAUSE

Press the record/record standby button.

The cassette deck will go into the recording standby state.
To resume recording, press the play button corresponding to the direction in which recording is taking place.

■ To stop recording

This function is also available from the remote control. Follow the procedures described below.

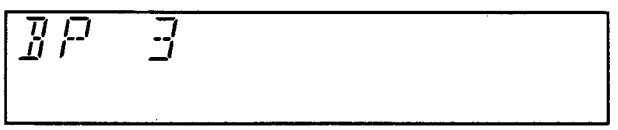
STOP

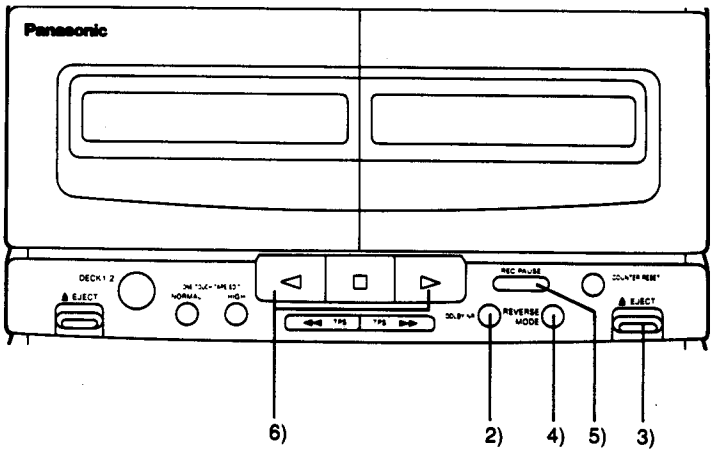
Press the stop button in the cassette deck section.

■ How to use the beat proof button

FM MODE/B.P

When an MW/LW broadcast is recorded, the beat proof button can be used to reduce unwanted "beat" signals (whistle) which are sometimes present. Press the FM mode/beat proof button in the tuner section to whichever position (BP 1, BP 2 or BP 3) best reduces these "beat" signals.





■ To erase a recorded tape (Deck 2)

When new recordings are made on a pre-recorded tape, all sounds recorded on that portion of the tape are automatically erased. To erase a tape without making a new recording, follow the steps below.

Steps 5, 6 can be operated using the remote control with the procedure below.

1) Press the input select button marked "TAPE".
2) Press the Dolby noise reduction button to go off the Dolby noise reduction indicator.
3) Insert the recorded tape into the cassette holder of deck 2.
4) Select the desired reverse mode.
5) Press the record/record standby button.
6) Press the playback button corresponding to the side to be erased.

■ To record with desired tone and effect

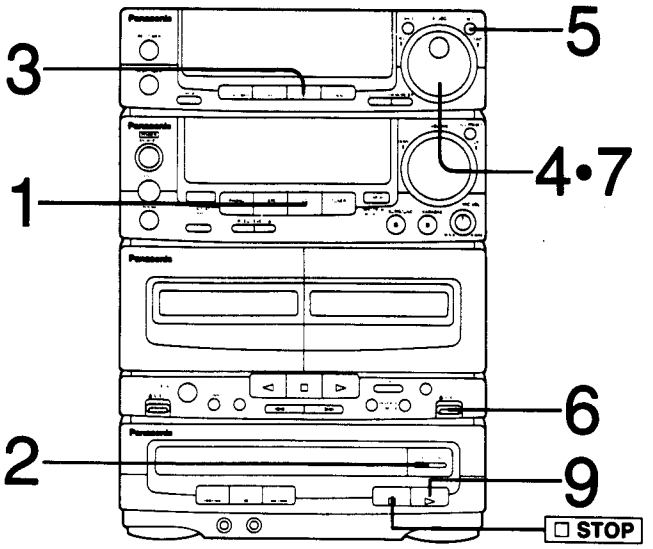
You can make a recording with the graphic equalizer and/or surround sound effect. (See page 47–51.)

When playing back such recordings, press the equalization ON/FLAT button to set "FLAT" and press the surround button to go off the surround indicator.

Edit-Recording from Compact Discs

Up to 36 tracks can be edit-recorded.
Use of the unit's edit-recording functions safeguard against a break in the continuity of the sound when the recording changes from one side of the tape to the other.

In any of the following edit-recording functions, you can record with desired tone and effect.
See "Changing the Tone Quality" on page 47-51.



Album edit-recording

The length of the tape required to accommodate the recording of all the tracks on the compact disc in their original sequences is calculated and displayed in advance. The tracks are then recorded in their original sequence.

Have you switched on the power?

1 Press the input select button marked "CD".

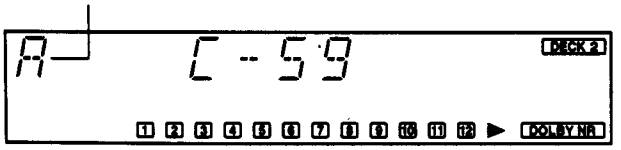
2 Press the disc tray open/close button to load a disc.
In this editing mode, compact discs with up to 36 tracks can be used. (If the compact disc has 37 or more tracks, "ERROR" appears first and then the program edit-recording mode is automatically established. Program up to 36 tracks in the program edit-recording mode, and proceed with the recording.)

3 Press the compact disc edit button.

4 Turn the jog dial to select the "ALBUM".
The "ALBUM"–"PROGRAM"–"FIT" displays will appear in sequence.

5 Press the setting button.
The length of the tape required to record all the tracks appears on the display.

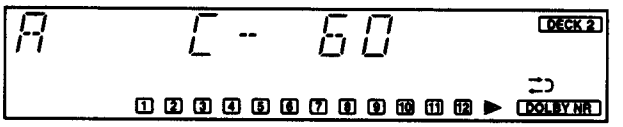
Album edit-recording display



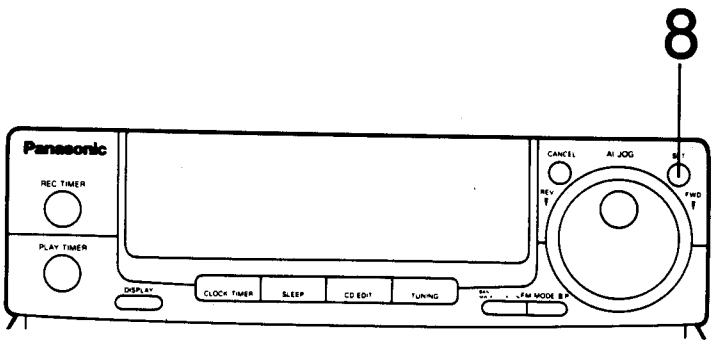
In this case, a C-59 or longer tape is required.

6 Load a tape in deck 2.
Since, in this case, a tape which is at least 59 minutes long is required, insert a C-60 tape.
Check that the tape's erasure prevention tabs are intact and rewind the recording tape, then insert the tape into deck 2.
When making a Dolby NR recording, press the Dolby noise reduction button.
•Set the reverse mode to ⇄

7 Turn the jog dial to specify the length of the tape.



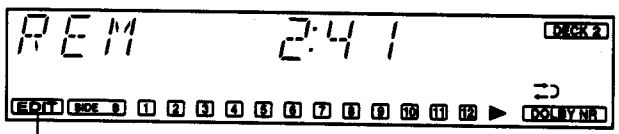
Your attention is drawn to the fact that recording pre-recorded tapes or discs on other published or broadcast material may infringe copyright laws.



8 Press the setting button.

The tracks are assigned to both sides of the tape and the results are displayed.

The time remaining on the tape side B will be displayed.



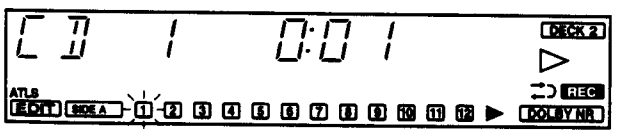
Edit indicator will illuminate

To confirm the time remaining on the tape side A, press the compact disc edit button. Each time you press the button, the display will change as follows:

1 The time remaining on the tape side A
2 The time remaining on the tape side B
3 The time remaining on both sides of the tape

9 Press the play button in the compact disc section to start recording.

The ATLS function (See page 40) will operate to adjust the recording level, and then recording will start.
When edit-recording has finished, the cassette deck automatically creates a non-recorded passage of about four seconds in length, and then enters the recording standby mode.



When wrong operation is occurred, press the cancel button. The unit is returned to previous setting mode.

■ To cancel the album edit-recording

This function is also available from the remote control. Follow the procedure described below.

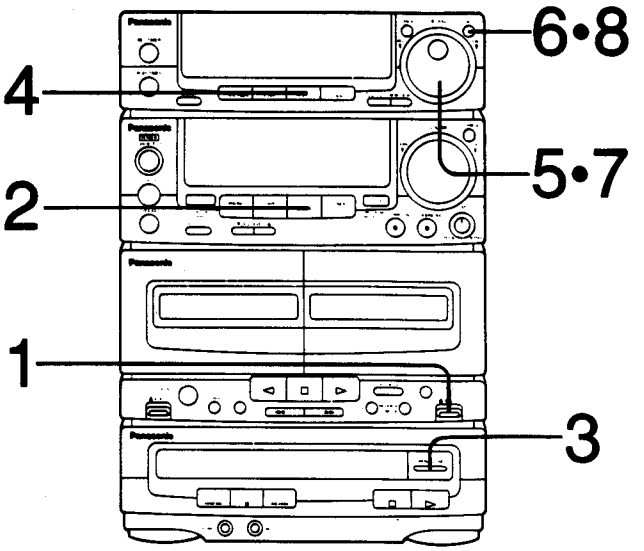
STOP

Press the stop button twice in the compact disc section.

(The "CLEAR" display will appear.)

Edit-Recording from Compact Discs

(continued)



Fit edit-recording

When all the tracks on a compact disc cannot be recorded in their original sequence due to restrictions on the tape length, it is sometimes possible to record them all by rearranging their sequence. The built-in microcomputer calculates whether this is possible and it specify track sequence.

1 **Press the deck 2 eject button to load a tape in deck 2.**
- Check that the tape's erasure prevention tabs are intact and rewind the recording tape. When making a Dolby NR recording, press the Dolby noise reduction button.
- Set the reverse mode to ⇄ .

2 **Press the input select button marked "CD".**

3 **Press the disc tray open/close button to load a disc.**

4 **Press the compact disc edit button.**

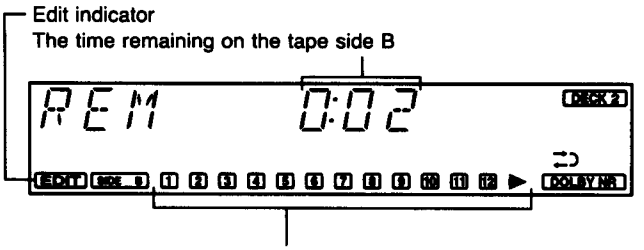
5 **Turn the jog dial to select the "FIT".**
The "ALBUM"–"PROGRAM"–"FIT" displays will appear in sequence.

6 **Press the setting button.**

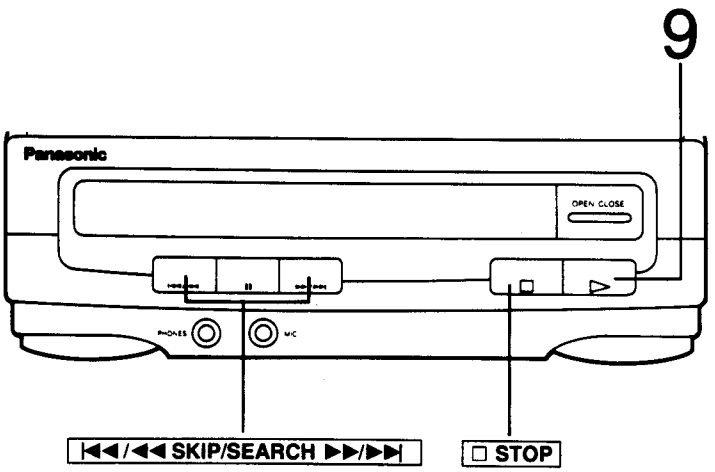
7 **Turn the jog dial to select the length of the tape to be used.**

8 **Press the setting button.**
The tracks are assigned to both sides of the tape and the results are displayed.
- See page 24 to confirm the tracks which have been specified to both sides of the tape.

Note:
When it is not possible to record all the tracks even by rearranging the track sequence, the OVER display will appear.


Edit indicator
The time remaining on the tape side B
REM
0:02
DECK 2
EDIT
1 2 3 4 5 6 7 8 9 10 11 12
DOLBY NR
Tracks which can be recorded on both sides

To confirm the time remaining on the tape side A, press the compact disc edit button. Each time you press the button, the display will change as follows:
1 The time remaining on the tape side A
2 The time remaining on the tape side B
3 The time remaining on both sides of the tape



9 Press the play button in the compact disc section for automatic recording.

The ATLS function (See page 40) will operate to adjust the recording level, and then recording will start.
When edit-recording has finished, the cassette deck automatically creates a non-recorded passage of about four seconds in length, and then enters the recording standby mode.
- When wrong operation is occurred, press the cancel button. The unit is returned to the previous setting mode.

Notes:
When it is not possible to record all the tracks even by rearranging the track sequence, the "OVER" display will appear.

When the OVER time display is 1 to 15 seconds:
Since a tape is actually a little longer than its indicated length, it may still be possible to record all tracks.

■ To cancel the fit edit-recording

This function is also available from the remote control. Follow the procedure described below.

STOP

Press the stop button twice in the compact disc section.
(The "CLEAR" display will appear.)

■ To confirm the play sequence

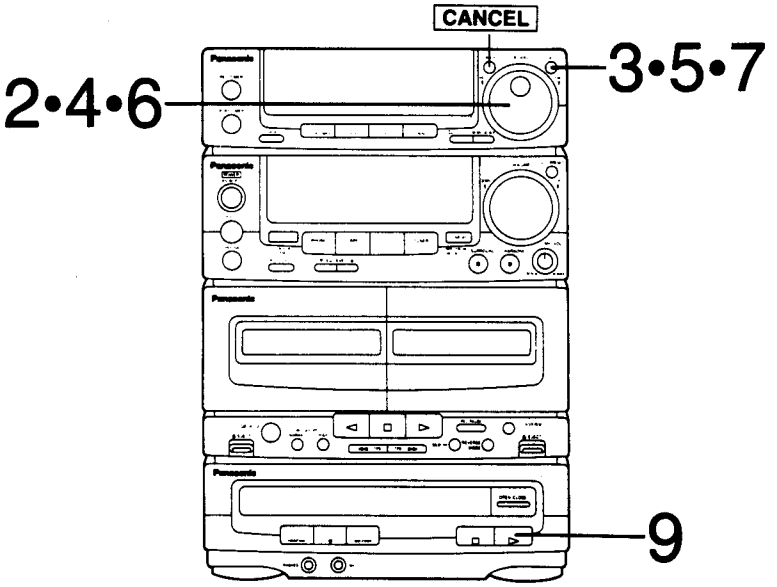
This function is also available from the remote control. Follow the procedure described below.

SKIP/SEARCH

Each time the skip/search button is pressed in the stop mode, the play sequence can be confirmed on the display.

Edit-Recording from Compact Discs

(continued)



Program edit-recording

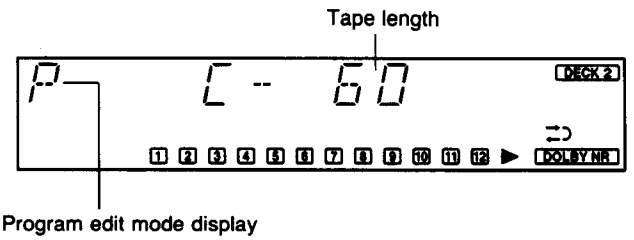
The tracks to be recorded can be specified in the desired sequence while checking how much time is left over on the display.

1 **Follow the steps 1~4 on page 36.**

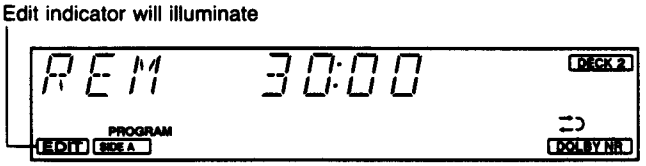
2 **Turn the jog dial to select the "PROGRAM".**
The "ALBUM"–"PROGRAM"–"FIT" displays will appear in sequence.

3 **Press the setting button.**

4 **Turn the jog dial to select the length of the tape to be used.**
You can specify the length by the minute.



5 **Press the setting button.**
The time remaining on the tape side A

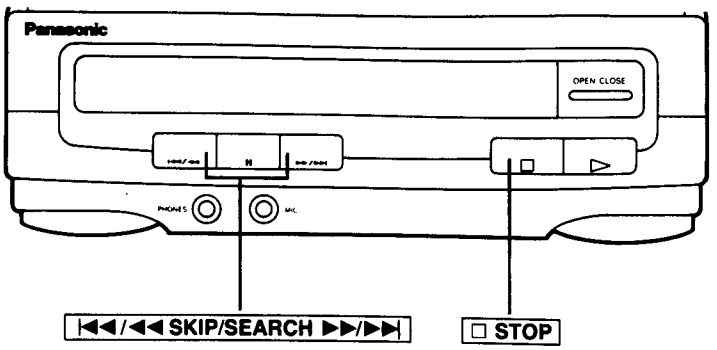


6 **Turn the jog dial to assign the tracks in sequence.**
Also you can assign the tracks using the numeric buttons on the remote control.

7 **Press the setting button.**

8 **Repeat the steps 6 and 7 to complete the program.**
If there is no more time left on tape side A, tape side B is automatically selected.
After a few seconds,the amount of time left over on side B will be displayed.

9 **Press the play button in the compact disc section to start recording.**
The ATLS function (See page 40) will operate to adjust the recording level, and then recording will start.
When edit-recording has finished, the cassette deck automatically creates a non-recorded passage of about four seconds in length, and then enters the recording standby mode.
- When wrong operation is occurred, press the cancel button. The unit is returned to the previous setting mode.



■ To cancel the programmed tracks

This function is also available from the remote control. Follow the procedure described below.

CANCEL

Press the cancel button.

Each time you press the cancel button, the programmed track will be cancelled one by one from the last track.

■ To cancel the program edit-recording

This function is also available from the remote control. Follow the procedure described below.

STOP

Press the stop button twice in the compact disc section.

(The "CLEAR" display will appear.)

■ To confirm the play sequence

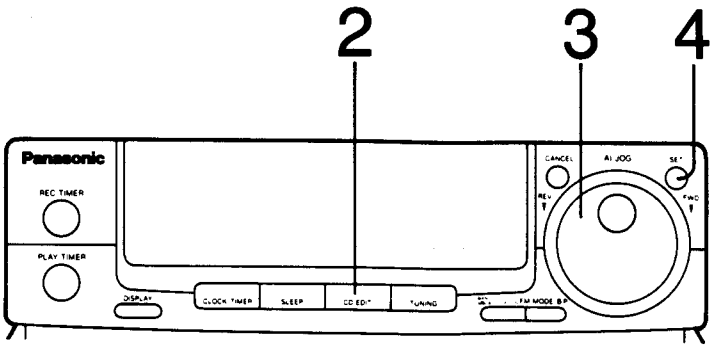
This function is also available from the remote control. Follow the procedure described below.

SKIP/SEARCH

Each time the skip/search button is pressed in the stop mode, the play sequence can be confirmed on the display.

Edit-Recording from Compact Discs

(continued)



Link edit-recording

When recording of the first disc has finished, the tracks of another disc can be recorded.

(After recording of the first disc has finished)

1 Press the disc tray open/close button to open the disc holder and then replace the disc.

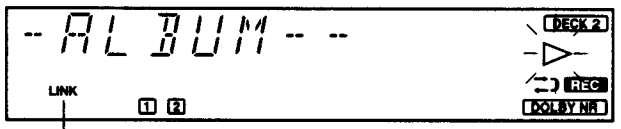
To close the tray, press this button again.

2 Press the compact disc edit mode select button.

Link edit mode display

3 Turn the jog dial to select the desired editing mode.

ALBUM: Recording in sequence
PROGRAM: As desired tracks and sequence



Link edit indicator

- It is not possible to select the editing mode except "ALBUM" and "PROGRAM".

4 Press the setting button.

When album edit recording is performed:
The unit will specify the tracks and display the result. (See page 34.)

When program edit recording is performed:
Specify the track and sequence using the jog dial and setting button. (See page 38.)

5 Press the play button in the compact disc section.

The ATLS function (See page 40) will operate to adjust the recording level, and then recording will start.
When edit-recording has finished, the cassette deck automatically creates a non-recorded passage of about four seconds in length, and then enters the recording standby mode.

- When you need to record a third disc or more, follow the steps above.

■ To cancel the link edit-recording

This function is also available from the remote control. Follow the procedure described below.
(In the recording standby mode)

STOP

Press the stop button in the deck section.

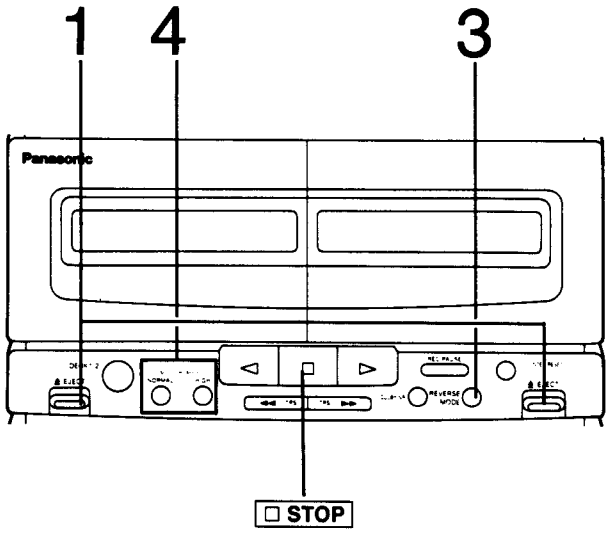
Notes:
When stopped the compact disc play during link edit recording, the editing mode will be cancelled.
Never release the recording standby condition of the deck section by pressing stop button.
(The editing mode will be cancelled.)

About ATLS (Automatic Tape Level Setting)

The unit automatically scans for the peak (highest) level of the entire disc.
When the peak level is found, the peak signal will be automatically sent to the tape deck for about six seconds and the tape deck will automatically set the recording level. During this period the peak level will not be output.

Tape-to-Tape Recording

The recording level of the original (playback) tape, and the noise reduction effect on the original tape, will be recorded to the new tape just as they were in the original recording.



To record from deck 1 to deck 2

The different type of tapes can be set in deck 1 and deck 2.

Have you switched on the power?

1 Insert the play back tape into deck 1 and the editing tape into deck2.
You cannot record on the leader tape, so take up the leader tape in advance.

2 Press the input select button marked "TAPE".

3 Select the desired reverse mode.

: Single sided recording (forward side only)

: Two-sided recording (forward side-reverse side)
In case the length of a tape set in the deck 2 is longer than a tape in the deck 1, the deck 1 repeats the playback until the deck 2 complete the two-sided recording.

4 Press one of the one touch tape edit buttons to select the editing speed.
Tape-to-tape recording is started by means of the synchro-start function.

NORMAL: When you wish to monitor the sound while recording

HIGH: When you wish to record with high-speed (About 1.7 times high speed)

- If you wish to listen to the monitor sound of the tape with Dolby NR, set the Dolby noise reduction switch to the ON position to playback with noise reduction (only normal speed recording).

■ To stop the tape-to-tape-recording

This function is also available from the remote control. Follow the procedure described below.

STOP

Press the stop button in the deck section.
When the deck 1 is stopped, deck 2 enters the recording standby condition. When the deck 2 is stopped, also deck 1 enters the stop condition.

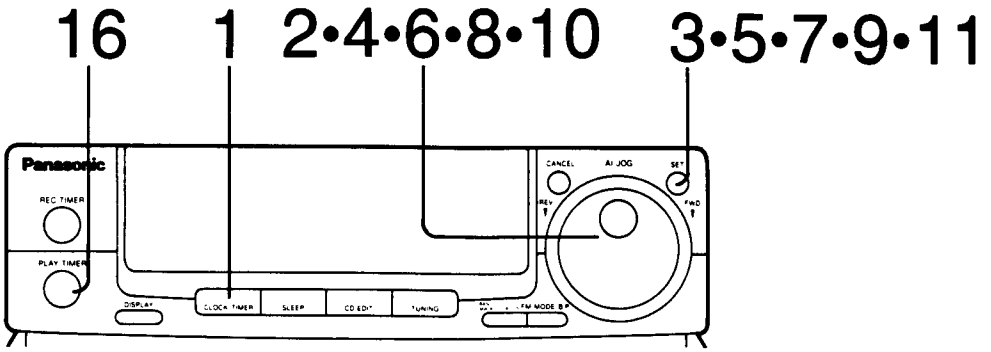
■ To record another tape on the tape left

Replace the original (playback) tape, then press one of the one touch tape edit buttons.

Notes:

- While tape-to-tape recording is in progress, you cannot change the editing speed.
- Some TV sets generate noise that could be recorded during tape to tape recording. To prevent the possibility of this, do not use this unit close to a TV set.

Using the Timer



Setting the timer play

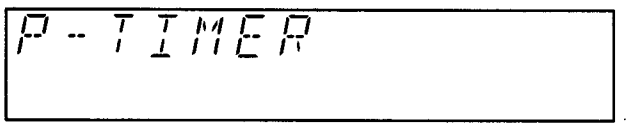
Have you completed "Setting the Time" on page 16 and "Memory Presetting" on page 29? If not, please complete these sections before continuing.

The following example will show how to set the timer play function for listening to compact disc from 7:15 to 8:00.

1 Press the "CLOCK/TIMER" button.

2 Turn the jog dial to select the "P-TIMER".

The display will return to what was previously indicated if 10 or more seconds are allowed to elapse before the next operation is accomplished.



3 Press the setting button.

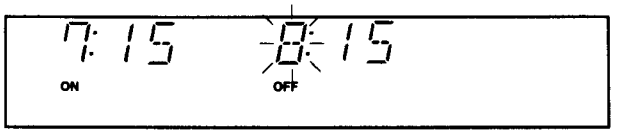
4 Turn the jog dial to select "7".

5 Press the setting button.

6 Turn the jog dial to select "15".

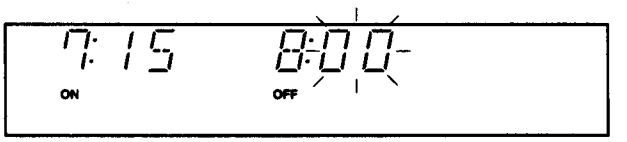
7 Press the setting button.

8 Turn the jog dial to select "8".



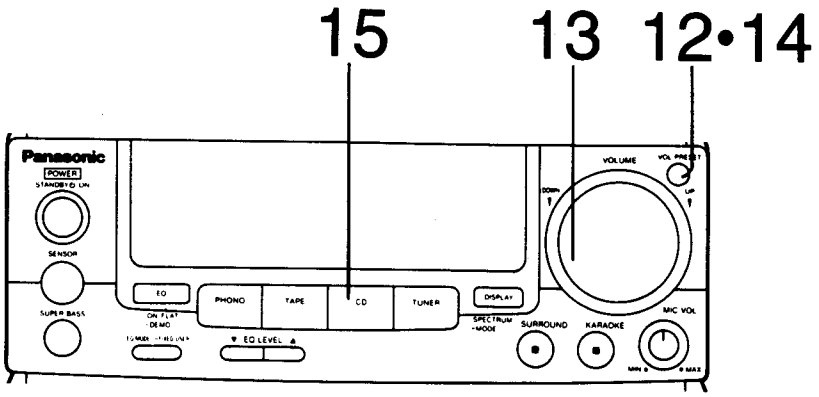
9 Press the setting button.

10 Turn the jog dial to select "00".



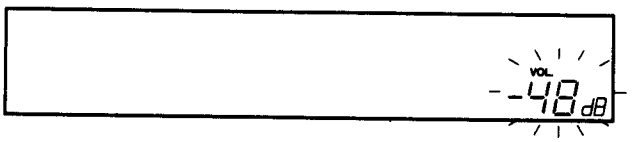
11 Press the setting button.

The display will change to the previous display.

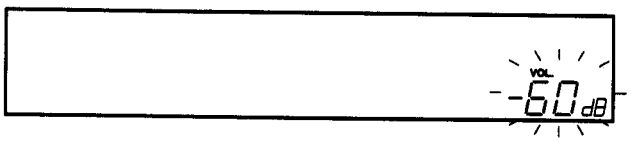


12 Set the volume level for timer play.

Press the volume preset button.
The volume level display will flash.



13 Adjust the volume level using the volume level control.



14 Press the volume preset button.

The volume level is preset into memory.
Select the compact disc source.

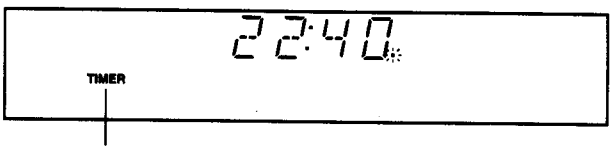
15 Press the input select button marked "CD".

You can enjoy the sequential play or program play by the timer.
For program play, specify the desired tracks.

Tuner
Press the input select button marked "TUNER" and select the desired band and tuned.

Tape
Press the input select button marked "TAPE".
Both deck 1 and 2 can be operated by the timer. When cassette tapes are set in both deck 1 and 2, deck 1 has priority.

16 Press the timer play button in the tuner section.



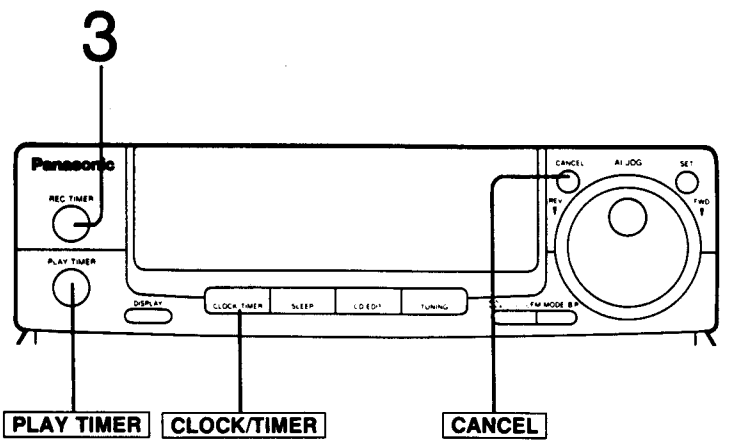
Illuminates

The timer play indicator will illuminate on the display.
In each case, play will start at the set time.

To enjoy the desired source after the timer setting is completed
Press the power switch to on, and select the desired source. After enjoying the source, return the unit to the timer setting mode. (The power is switched to the standby mode.) Even if you change the volume level after presetting the volume level for the timer play, the timer play will start with the preset volume level.

Notes:
- In the power switched on condition, the timer will not be functioned.
- To play a compact disc using the timer, do not open the disc holder if tracks have already have been programmed. (This will clear the programming and play will start from the first track.)
- It is not possible to set the timer play of a turntable system.

Using the Timer (continued)



Setting the timer play

■ To cancel the timer play

PLAY TIMER

Press the play timer button.

The play timer indicator will no longer illuminate.
The timer will not be functioned, but the setting for the timer play still be memorized in the unit.

■ When wrong setting has been done

CANCEL

Press the cancel button.

The display will return to the previous step.

■ To confirm the timer play

CLOCK/TIMER

Press the clock/timer button in the power standby mode.

The ON time and OFF time will be displayed. The setting source will be displayed if the button is pressed again.

Setting the timer recording

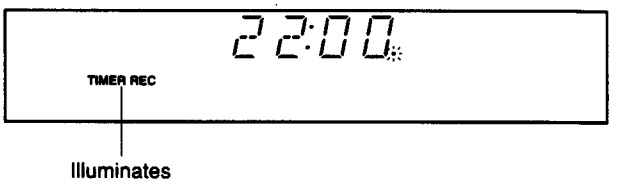
Have you completed "Setting the Time" on page 16 and "Memory Presetting" on page 29? If not, please complete these sections before continuing.

1 **Follow steps 1-11 on page 42 for setting the time. (Select the "R-TIMER" in step 2.)**

2 **Press the input select button marked "TUNER" and tune in the station which broadcast is to be recorded, and then insert the tape into deck 2.**

3 **Press the timer recording button.**

The timer recording indicator will illuminate.
Timer recording will start at the preset time.



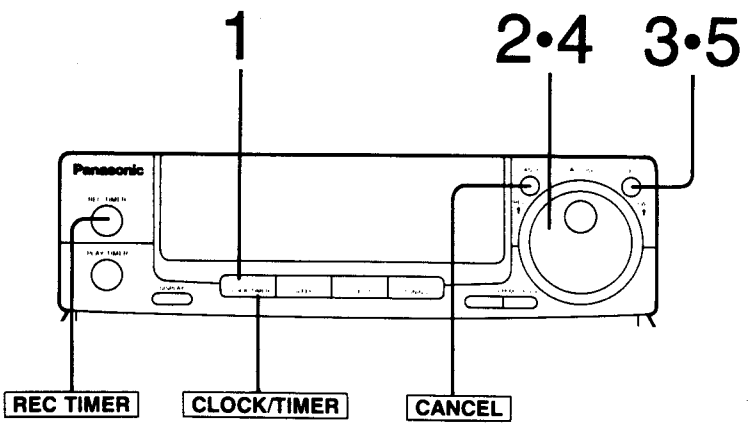
Upon completion of the recording, release the timer recording mode by pressing the timer recording button to avoid making an operational error.

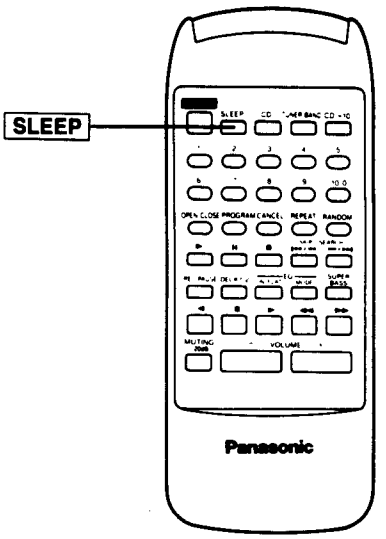
To enjoy the desired source after the timer setting is completed

Press the power switch to on, and select the desired source. After enjoying the source, return the unit to the timer setting mode. (The power is switched to the standby mode.) When enjoying the tape play, use the deck 1.

Notes:

- In the power switched on condition, the timer will not be functioned.
- While the timer recording is operated, the volume level is automatically "-- dB". If you wish to monitor the sound, adjust the volume level with the volume level control.
- It is not possible to set the timer recording of a turntable system and the tape.
- It is not possible to set the timer recording and timer play simultaneously.
  (For example, it is not possible to record with timer of the program in middle of night, and then wake-up by timer play at next morning.)





Setting the timer recording

■ To cancel the timer recording

REC TIMER

Press the timer recording button.

The timer recording indicator will no longer illuminate.
The timer will not be functioned, but the setting for the timer recording still be memorized in the unit.

■ When wrong setting has been done

CANCEL

Press the cancel button.

The display will return to the previous step.

■ To confirm the timer recording

CLOCK/TIMER

Press the clock/timer button in the power standby mode.

The ON time and OFF time will be displayed. The setting source will be displayed if the button is pressed again.

To use the sleep timer

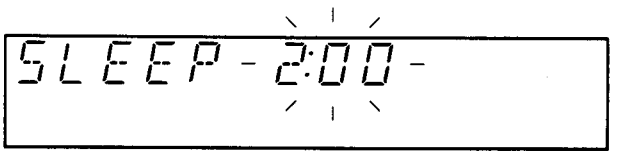
- This timer function can be also used to switch the power to the standby mode at the desired time (within a range of 120 minutes to 1 minute from the present time).
- Use this timer to switch the power to the standby mode automatically even if you fall asleep while listening.
- Step 3 can be operated from the remote control. Follow the procedure described below.

1 Press the clock/timer button while the sound source is being played.

2 Turn the jog dial to select the "SLEEP" while the sound source is being played.

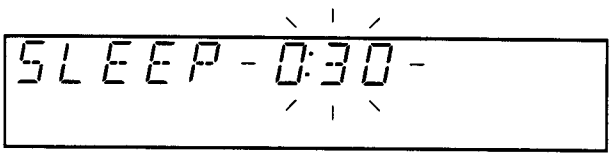
The display will return to the previous indication after 10 seconds. Please finish setting within 10 seconds.

3 Press the setting button.



4 Turn the jog dial to set the desired sleep time.

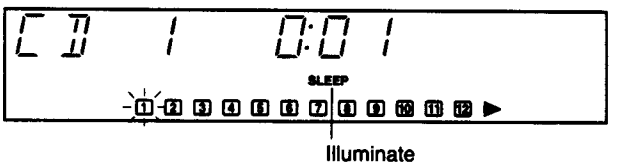
↷ : 0:01–0:02–0:03–0:04...
↶ : 2:00–1:59–1:58–1:57...



5 Press the setting button.

The display will return to the previous display.

- The sleep time set by the steps above is retained in memory. If you want to operate the unit on the same sleep time, only press the sleep timer button.
- The sleep timer indicator will illuminate.



Illuminate

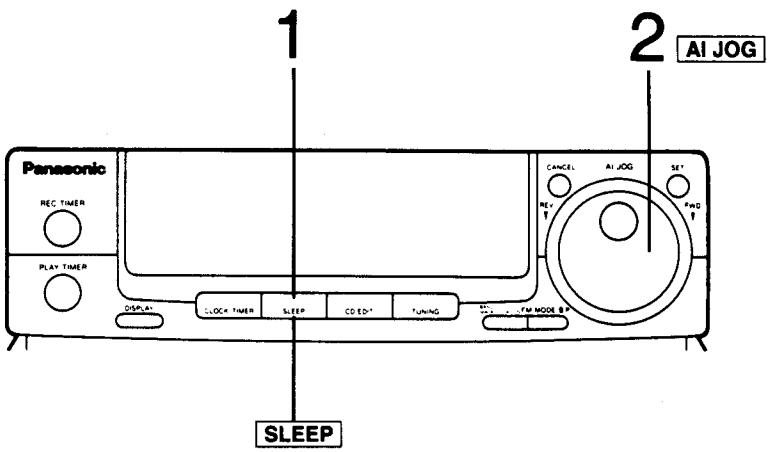
■ To confirm the time remaining on the sleep timer

SLEEP

Press the sleep timer button.

After approximately one minute after the sleep timer is activated, the tuner display will return to showing the mode display. If the button is pressed in this condition, the time remaining on the sleep timer will be displayed for approximately 10 seconds, and if the button is pressed once more while the time remaining on the sleep timer is being displayed, the sleep timer wil be canceled.

Using the Timer (continued)



To use the sleep timer

■ To change the time remaining on the sleep timer

SLEEP

1 Press the sleep timer button.

Within 5 seconds, follow the next operation. If not, the display will return to what was previously indicated.

AI JOG

2 Turn the jog dial to set the desired time .

■ To cancel the sleep timer mode

POWER

SLEEP

Press the power switch to standby mode or press the sleep timer button twice.

■ To use the sleep timer in conjunction with the timer play or timer recording operation

For example, to go to sleep listening to the radio broadcasts, and wake up the next morning listening to compact disc.

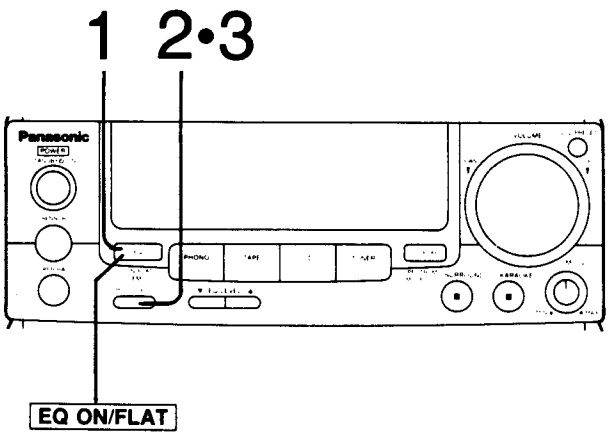
1) Set the ON time and OFF time for the timer play. (See page 42.)
2) Prepare for the play of a compact disc, and set the volume level for the timer play.
3) Press the play timer button.
   The unit will be switched to the standby mode.
4) Press the sleep timer button and set the desired time for the sleep timer.
   The power will be switched on, and the sleep timer indicator will illuminate.
5) Tune to your desired band and adjust the volume level.

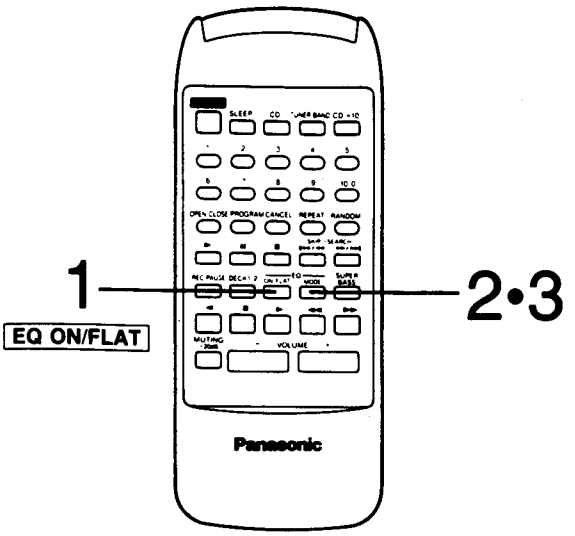
For example, to go to sleep listening to compact disc, and then to make a timer recording from the radio broadcasts

1) Set the ON time and OFF time for the timer recording. (See page 42.)
2) Select the desired band.
3) Load a tape for recording in deck 2.
4) Press the timer recording button.
5) Press the sleep timer button, and set the time for the sleep timer.
   (Be sure to set the sleep time to be off before the timer recording starts.)
6) Play the compact disc and adjust the volume level.

When the timer play or the timer recording setting overlaps with the sleep timer setting, the sleep timer setting has priority.

Changing the Tone Quality





To retrieve equalization curves pre-programmed to this unit

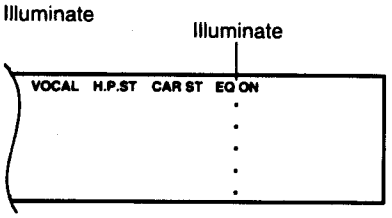
This unit has been pre-programmed with six types of typical equalization curves. (See page 48.)

Have you switched on the power?

This function is also available from the remote control. Follow the procedure described below.

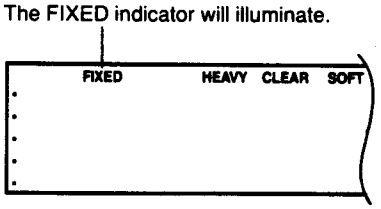
1 Press the equalizer ON/FLAT button to ON.

The equalizer on indicator will illuminate.



2 Press and hold the equalizer mode select button to select FIXED.

The FIXED indicator will illuminate.



3 Press the equalizer mode select button to select the desired equalization curve.

Each press of the equalizer mode select button advances the equalization curve setting in the following sequence. (See page 48.)

HEAVY→CLEAR→SOFT
↑ ↓
CAR ST←H.P.ST←VOCAL

■ To bypass the graphic equalizer

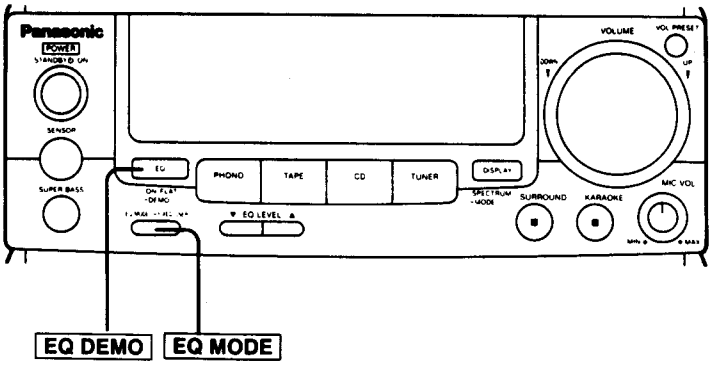
This function is also available from the remote control. Follow the procedure described below.

EQ ON/FLAT

Press the equalizer ON/FLAT button to select FLAT.

The equalizer flat indicator will illuminate.

Changing the Tone Quality (continued)



To change the equalization curve continuously

(Demonstration function)

Use this function for reference of the adjustments of equalization curves.

EQ DEMO

While the source is being played

Press and hold the equalizer ON/FLAT button.

The equalization curves will change in sequence as follows.

Fixed curve—fixed curve with max.position of equalizer effect—fixed curve with min. position of equalizer effect—fixed curve-super bass effect—surround sound effect—karaoke effect—fixed curve...

■ To cancel the demonstration function

EQ DEMO

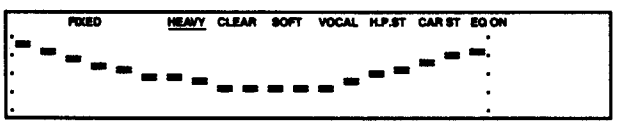
Press the equalizer ON/FLAT button momentarily.

About equalization curves pre-programmed to this unit

EQ MODE

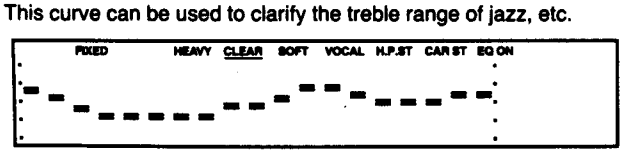
1 HEAVY

This curve can be used to add "punch" to rock and other music.



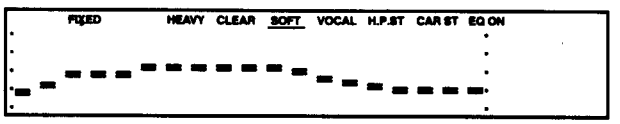
2 CLEAR

This curve can be used to clarify the treble range of jazz, etc.



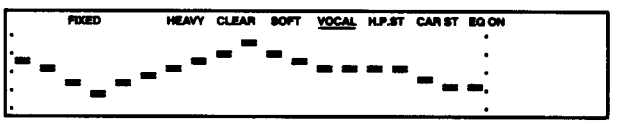
3 SOFT

This curve can be used to listen to background music, etc. at a low volume level.



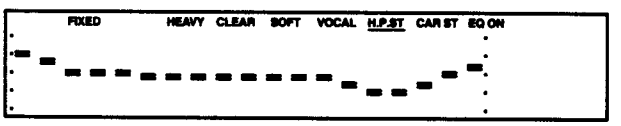
4 VOCAL

This curve can be used to clarify vocal music.



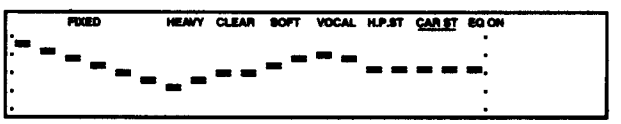
5 H.P.ST

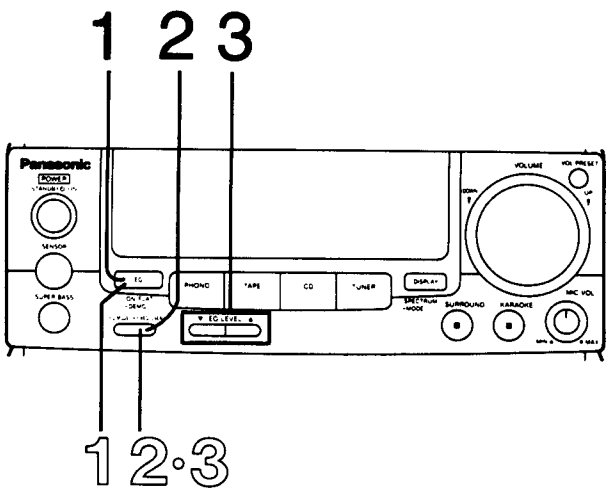
This curve can be used to record a tape for playback using the stereo cassette player (Headphones Stereo).

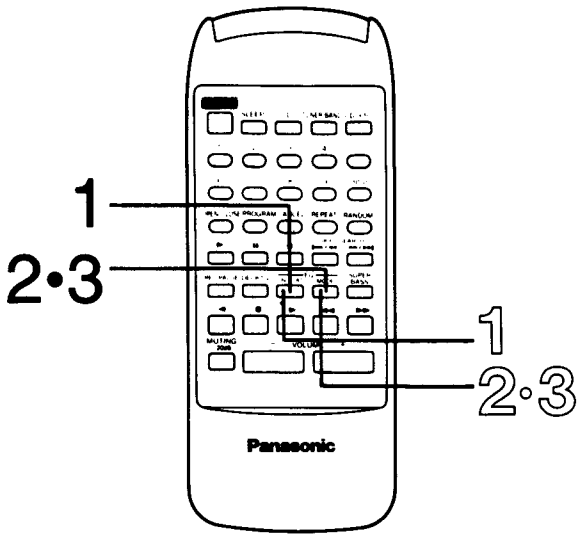


6 CAR ST

This curve can be used to record a tape for play back using the car audio system (Car Stereo).



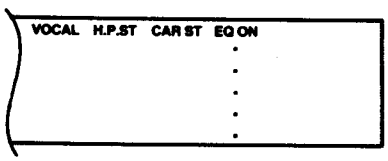




To store a desired equalization curves (USER curve)

You can easily create the desired tone quality by using the sound effect level buttons.

1 Press the equalizer ON/FLAT button to ON.
The equalizer on indicator will illuminate.

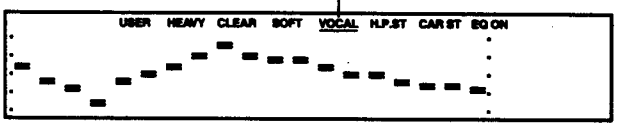


2 Press the equalizer mode select button to select the desired equalization curve.
Each time you press this button, the equalization curve will change as follows.

HEAVY→CLEAR→SOFT
↑ ↓
CAR ST←H.P.ST←VOCAL

3 Adjust the equalization effect to create the desired tone quality with the sound effect level buttons.
Once the adjustment has been done, the equalization curves will be automatically stored as the "USER" curve in the unit's memory.

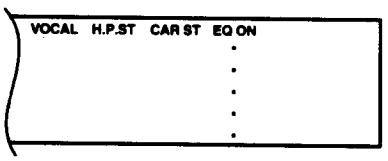
For example: VOCAL
Max. position of equalizer effect
Illuminates



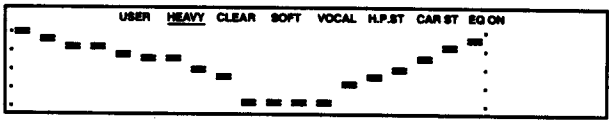
To retrieve USER curves from the memory

This function is also available from the remote control. Follow the procedure described below.

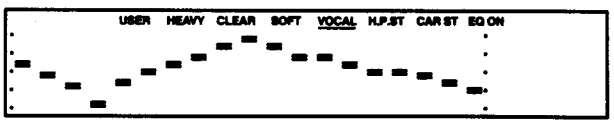
1 Press the equalizer ON/FLAT button to ON.
The equalizer on indicator will illuminate.



2 Press and hold the equalizer mode select button to select "USER".
The USER indicator will illuminate.

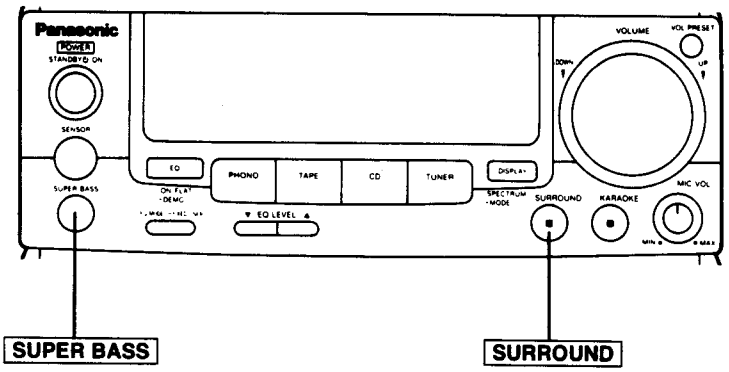


3 Press the equalizer mode select button momentarily to select the desired equalization curve.
Each time you press this button, the equalization curve will change as follows.
HEAVY–CLEAR-SOFT–VOCAL–H.P.ST–CAR ST...



To retrieve the FIXED mode curve after this setting, press and hold the equalizer mode select button again. (FIXED indicator will illuminate.)

Changing the Tone Quality (continued)

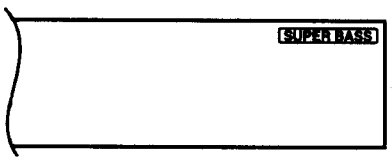


To listen with augmented bass (Super bass effect)

This function is also available from the remote control. Follow the procedure described below.

SUPER BASS

Press the super bass button.
(The super bass indicator will illuminate.)



- You cannot make a recording with the super bass effect.

■ To cancel the super bass mode

This function is also available from the remote control. Follow the procedure described below.

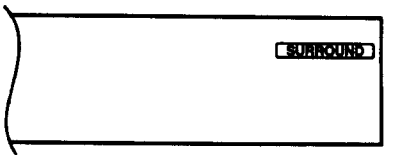
SUPER BASS

Press the super bass button.
(The super bass indicator will no longer illuminate.)

Producing a "Live" performance sound (Surround sound effect)

SURROUND

Press the surround button.
(The surround indicator will illuminate.)

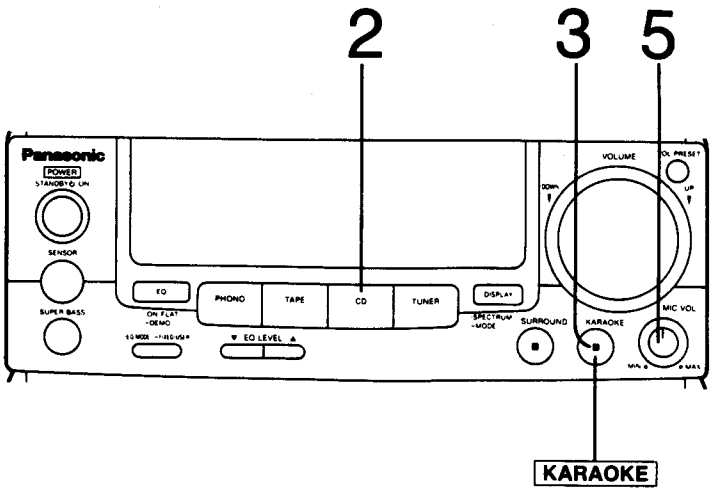


- If you connect the surround speakers to this unit, you can enjoy more effective sound.
  You cannot enjoy the surround sound effect with the karaoke function.
- When playing back the tape recorded with the surround sound effect, press the surround button to go off the surround indicator.

■ To cancel the surround mode

SURROUND

Press the surround button.
(The surround indicator will no longer illuminate.)



Using the "KARAOKE" function

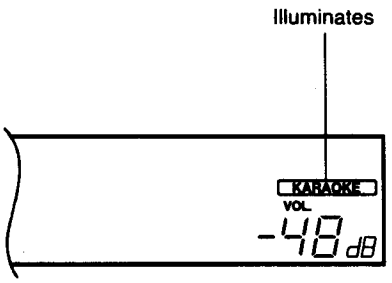
This function attenuates only the singing voice in the tune, so you can easily enjoy karaoke (singing with an accompaniment) with compact discs.

1 Connect the microphone to the MIC jack.

2 Press the input select button marked "CD", and start playing a compact disc.

3 Press the karaoke button.

The karaoke indicator will illuminate, and the singing voice is mixed with the sound of the selected source.



4 Start microphone mixing.

5 Adjust the microphone level.

■ To cancel the karaoke mode

KARAOKE

Press the karaoke button.

(The karaoke indicator will no longer illuminate.)

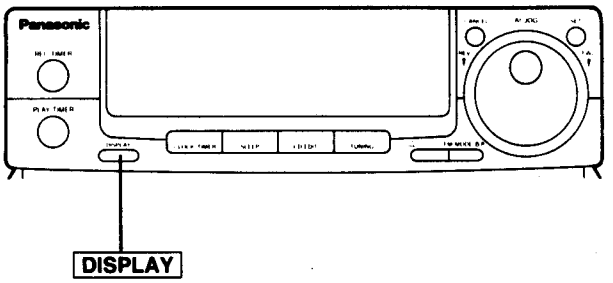
■ To make a mixing recording with karaoke function

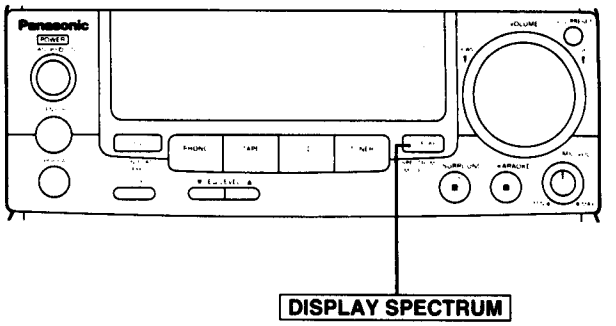
Start recording in deck 2, and then start karaoke. To playback the tape recorded with karaoke function, press the karaoke button to go off the karaoke indicator.

Notes:

- This function may not be effective according to the types of the tune.
- You cannot enjoy karaoke function with the surround sound effect.
- If strange noises(squealing or howling) are emitted during mixing, keep the microphone far away from the speakers, or turn down the volume.
- When not using the microphone, disconnect the microphone from the MIC jack, and turn down the microphone volume level to MIN.
- This function can't be used to the compact disc of monaural source.

Concerning the Display





Selecting the display

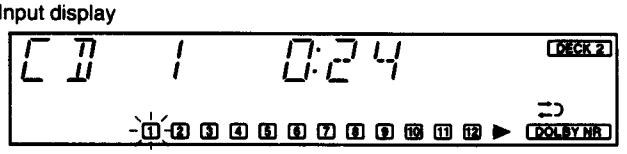
DISPLAY

Every time the display select button is pressed, the unit's display can be stepped through the mode displays, present time, tape counter.

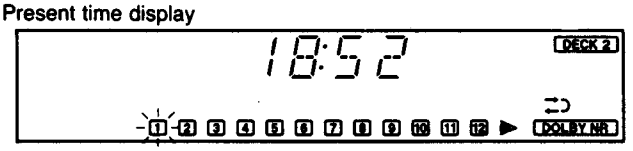
This feature comes in handy during recording when making a note of the tape counter or chekcing out the present time for recording a radio program.

When the input select button marked "CD" is used

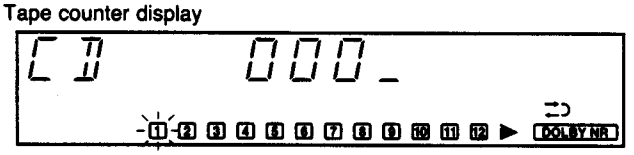
Input display



Present time display



Tape counter display



About the spectrum display

DISPLAY SPECTRUM

- The spectrum analyzer shows the level of each sound range with five types of display described below.
- To change the spectrum display, press the spectrum display select button momentarily.
- The spectrum analyzer display overlapped with the equalization curve will change as follows.

1 Bar-type display

This display indicates the strength of the sound in each tonal range.

2 Peak-hold display

The peak sound value of each sound range is held on the display for about one second after occurs.

3 Dot display

Only the upper two parts of the bar display are shown, thus making the strength of the sound for each sound range even easier to see.

4 Aurora display

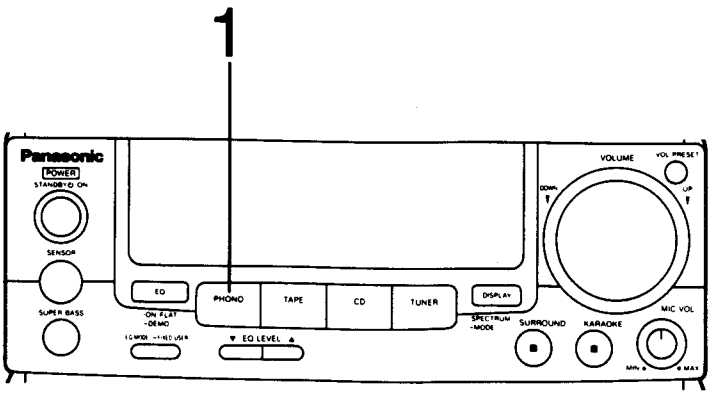
The peak sound value of each sound range is displayed in inverted form.

5 Symmetry display

This display indicates the strength of the sound from up and down.

To display the spectrum analysis display only, press and hold the spectrum display select button. The equalization curves will be no longer displayed.

Using an External Unit



To enjoy an external source

You can connect the turntable system or analog turntable to this unit.

1 **Press the input select button marked "PHONO".**

2 **Operate the unit which is connected to this system.**

See the instruction manual of the unit concerned for operating instructions.

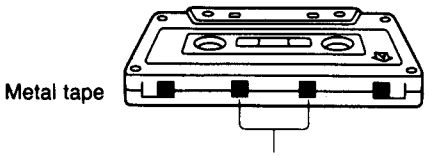
- You can record on record from the turntable. When recording from the turntable, the recording level will be automatically set.

About Cassette Tapes

Selection of cassette tapes

Do not use the following types of tapes in this unit.

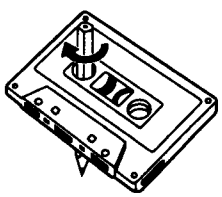
- **120-minute (or longer) tapes**
  Because the tape is very thin, it might stretch during use causing unstable tape movement which may result in the tape becoming tangled in the rotating parts of this unit.
- **Fe-Cr tapes (TYPE III)**
  The high frequency range will be emphasized and it will not be possible to obtain a flat frequency response.
- **Metal tape without detection holes in the cassette**
  Recordings will be very distorted. (There is no playback problem, however.)



Tape slack

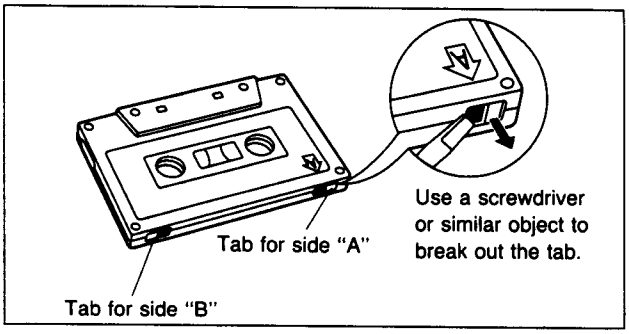
Tape slack may cause the tape to break.

Use a pencil or similar object to take up the slack.



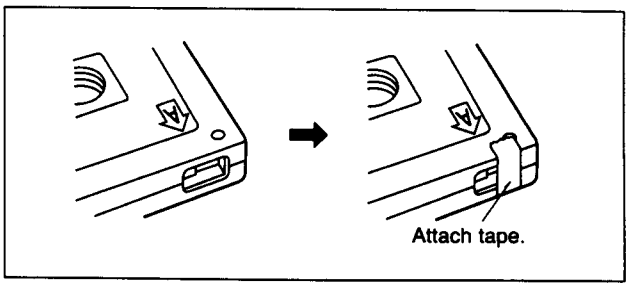
To prevent erasure of recorded sounds

Remove the erase-prevention tabs (thus preventing recording).



■ To re-record on a protected cassette

Cover the slot with adhesive tape.



Avoid tape storage in the following places

Tape can be damaged if it is stored in places such as described below.

- Where the temperature is high (95°F/35°C or higher) or where the humidity is high (80% or higher).
- Where there is a strong magnetic field (near a speaker, on top of a TV, etc.). Recording may become erased.
- In direct sunlight.

About Compact Discs

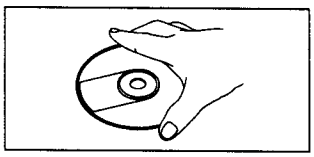
Handling precautions

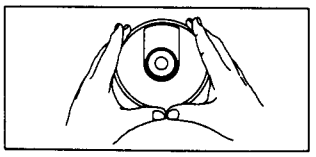
Only compact discs having this mark can be used with this unit.

COMPACT disc DIGITAL AUDIO

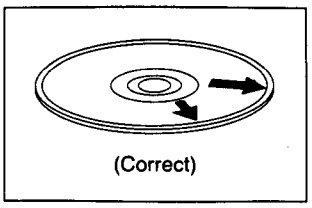
Observe the following precautions to enjoy the same outstanding sonic performance from your Compact Discs for many years.

- Hold compact discs by the edges so the surface is not soiled with fingerprints.

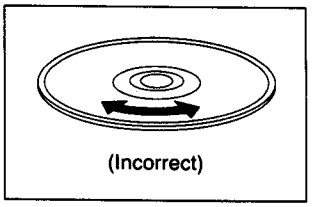




- Be careful not to scratch the surface with fingernails or other sharp objects, particularly when inserting and removing discs from their cases.
- Do not bend the disc.
- Do not use record cleaning sprays or static electricity prevention liquids.
- Do not wipe with benzine, thinner or any other solvent. If the surface is soiled, wipe gently with a soft, damp (water only) cloth.
- When wiping discs, always move the cloth directly outward from the center of the disc, not in a circular motion as with standard phonograph records.



(Correct)



(Incorrect)

(In compact discs, circular scratches along a line of pits are more likely to cause errors than straight scratches across many lines of pits.)

- If the disc is brought from a cold environment into a warm room, moisture may form on the disc. Wipe this off with a soft, dry, lint-free cloth before using the disc.
- Do not dry discs with a hair dryer.
- Do not write on the label side with a ball-point pen, hard pencil or other writing utensil.
- Handle compact discs with care. Fingerprints, dirt and scratches can cause skipping and distortion.

Storage precautions

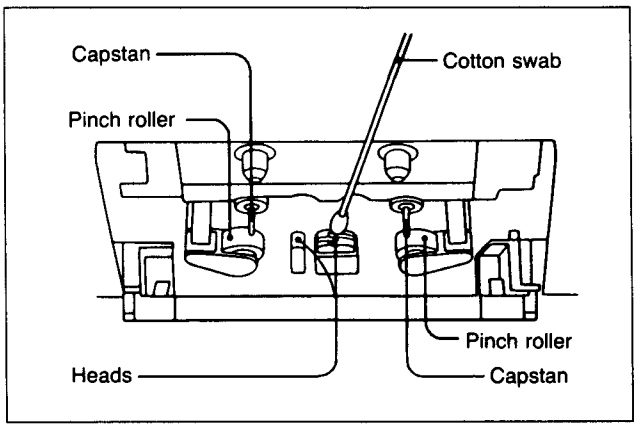
- Be sure to store discs in their cases to protect them from dust, scratches and warping.
- Do not place or store discs in the following places:
  1) Locations exposed to direct sunlight.
  2) Humid or dusty locations.
  3) Locations directly exposed to a heat outlet or heating appliance.
  4) In the glove compartment or rear ledge of an automobile.

Maintenance

Head care

To assure good sound quality for recording and playback, be sure to clean the heads after approximately every 10 hours of use.

1. Switch the power of this unit to standby mode.
2. Press the eject button to open the cassette holder.
3. Clean the heads, pinch roller and the capstan shaft of each deck with a cotton swab (or with a soft, lint-free cloth) slightly moistened with alcohol.
   Do not use any solution other than alcohol for head cleaning.



Head demagnetization

In order to maintain good sound quality during recording and playback, it is recommended that the heads should be demagnetized if distortion or poor sound quality persist after cleaning the heads.
If the heads become magnetized, they could create noise in recordings, loss of high-frequency response, or erasure of valuable recordings. Several types of head demagnetizers are available and may be purchased at local electronics supply stores. Follow the instructions that are supplied with the device.

- Do not bring any type of metal objects or tools such as magnetic screwdrivers in contact with the head assembly.

Maintenance of external surfaces

To clean this unit, use a soft, dry cloth.
For very dirty surfaces, dip a soft cloth in a weak soap-and-water solution and wring well. After cleaning, wipe with a soft, dry cloth.
Never use alcohol, paint thinner, benzine, or a chemically treated cloth to clean this unit.
Such chemicals may damage the unit's finish.

Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.
If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer for instructions.

Problem	Probable cause(s)	Suggested remedy
Problems common to all units		
No sound is emitted when the power is switched ON.	"--" appears on the volume level display.	•Adjust the volume level with the volume control on the amplifier.
The location of the various musical instruments is not well defined.	Reverse the (+) and (−) connections to one of the speakers.	•Connect the speaker cord correctly.
The left and right sounds are reversed.	Reverse the left and right connections to the speaker.	•Connect the speaker cord correctly.
Sound is emitted from only one speaker.	One of the wires of the speaker cord is disconnected.	•Connect the speaker cord correctly.
No sound is heard when a source is being played.	The (+) and (−) wires of the speaker cords are shorted.	•Switch off the system, re-connect the speaker cords so that it is not shorted, then switch the power ON again.
A low frequency hum is heard when a source is being played.	The power cord or a fluorescent light is located near a connecting cord.	•Keep electrical appliances well away from the connecting cords.
The "ERROR" indicator appears on the display for about 1 second.	The wrong operation has just taken place.	•Perform the correct operation of the present step again.
While listening to FM broadcasts		
A "rushing" noise which is not heard during a monaural broadcast is heard during a stereo broadcast.	Noise is more likely to appear on a stereo signal than on a monaural signal.	•If an indoor antenna is being used, change to an outdoor antenna. •If a special outdoor antenna is being used, try changing the installation location, height, and orientation. •Try switching off the television or video deck. •Press the FM mode button on the remote control to change the reception from stereo to monaural mode.
Much noise is heard during a stereo broadcast, and occasionally the sound from the program disappears.	The installation location and orientation of the antenna are unsuitable. The transmitting station is a long distance away.	
The stereo indicator of the tuner flickers and does not light completely.		
The sound during a stereo broadcast is highly distorted.	There is a building or mountain nearby. [Distortion is caused by interference between the signal from the transmitting station (direct wave) and the signal reflected from the building or mountain (reflected wave).]	
While listening to MW/LW broadcasts		
An unusual beat sound is heard.	The system is being used at the same time as a television set.	•Switch off the television set, or use the system farther away from
A low frequency hum is heard.	The antenna wire is near the power cord.	•Separate the antenna wire from the power cord.

Troubleshooting Guide (continued)

Problem	Probable cause(s)	Suggested remedy
When there is a television set nearby		
The picture disappears or stripes can be seen.	The location and orientation of the antenna are incorrect.	•If an indoor antenna is being used, change to an outdoor antenna. •Separate the television set from the system.
	The wiring at the back of the system is unsuitable.	•Separate the antenna wire of the television set from the system.
While listening to tapes		
Sound is low, intermittent, of poor qualityu, noisy, scrachy, or unsteady.	Heads are dirty.	•Clean the heads.
	The Dolby NR switch is set in the wrong position.	•Set it to match the recording condition.
The deck section does not enter the recording mode.	The erase-prevention tabs have been removed.	•Attach tape to cover the space left by removal of the
The cassette holder doesn't open by even pressing the eject button.	The AC power cord has disconnected or the power interruption has taken place during the operation.	•After re-connecting the AC power cord, switch on the power and then press the eject button.
While listening to compact disc		
The tray does not close when a disc is loaded and the OPEN/CLOSE button pressed.	The disc is not sitting correctly in the disc tray.	•Re-insert the tray.
The total number of tracks and total time are not displayed when a disc is loaded. The disc does not start being played when the play button is pressed. A certain part of the disc cannot be played.	The disc is not sitting correctly in the disc tray.	•Re-insert the tray.
	The disc is loaded upside down.	•Re-load the disc.
	The disc is dirty.	•Wipe the disc with a soft cloth.
	The disc is scratched.	•Replace the disc with a new one.
	The disc is badly warped.	•Skip the scratched part of the disc (skip play).
	The disc used is a non-standard one.	•Replace the disc with a different one.
	There is condensation inside the unit.	•Switch ON the power, then wait for 20 to 30 minutes before using it.
While using the remote control		
The system cannot be operated with the remote control.	The batteries are installed in the reverse polarity.	•Re-insert the batteries in the correct polarity.
	The batteries are worn.	•Replace the batteries with new batteries.

Technical Specifications

(DIN 45 500)

AMPLIFIER SECTION

40 Hz–16 kHz continuous power output	
both channels driven	2×20 W (THD 1%, 6Ω)
1 kHz continuous power output	
both channels driven	2×30 W (THD 1%, 6Ω) (at 240 V)
MPO	2×120 W (THD 10%, 6Ω)
PMPO	240 W (THD 10%, 6Ω)
Total harmonic distortion	
half power at 1 kHz	0.07% (6Ω)
Frequency responce	
PHONO	30 Hz–15 kHz RIAA standard curve ±1 dB
Input sensitivity and impedance	
PHONO	3 mV/47 kΩ
Graphic equalizer	(63 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz, 12.5 kHz)

FM TUNER SECTION

Frequency range	87.50–108.00 MHz (0.05 MHz steps)
Sensitivity	14.7 dBf (1.5 μV, IHF'58)
S/N 26 dB	1.3 μV (40 kHz mod., 75Ω)
Total harmonic distortion	
MONO	0.2%
STEREO	0.3%
S/N	
MONO	70 dB (75 dB, IHF)
Alternate channel selectivity ±400 kHz	70 dB
Image rejection at 98 MHz	80 dB
Stereo separation	
1 kHz	35 dB
Antenna terminal(s)	75Ω (unbalanced)

MW/LW TUNER SECTION

Frequency range	
MW	522–1611 kHz (9 kHz steps) 530–1620 kHz (10 kHz steps)
LW	144–288 kHz (9 kHz steps)
Sensitivity (S/N 20 dB)	
MW (at 999 kHz, 1000 kHz)	500 μV/m
LW (at 254 kHz)	50 μV

CASSETTE DECK SECTION

Track system	4 track, 2 channel
Heads	
Playback	Permalloy head
Record/playback	Permalloy head
Erasure	Double gap ferrite head
Moter	DC servo moter
Recording system	AC bias, 100 kHz
Tape speed	4.8 cm/sec
Frequency responce	
NORMAL	40 Hz–14 kHz (+3, −6 dB)
CrO_2	40 Hz–14 kHz (+3, −6 dB)
METAL	40 Hz–15 kHz (+3, −6 dB)
S/N (CrO_2 type tape)	
Dolby NR off	52 dB (A-WTD)
Dolby NR on	61 dB (CCIR)
Wow and flutter	0.1% (WRMS)
Fast forward and rewind time	Approx. 110 seconds with C-60 cassette tape

CD SECTION

Number of channels	Stereo
Sampling frequency	44.1 kHz
Decording	16-bit linear
Beam Source/wave length	Semiconductor laser/780 nm
Frequency response	20 Hz–20 kHz (+1, −2 dB)
S/N	95 dB Filter (JIS.A)
Wow & Flutter	Below measurable limit
Digital filter	4 fs

SPEAKER SYSTEM

Type	3 way 3 speakers bass-reflex
Speaker(s)	Woofer 14 cm cone type Midrange 6 cm cone type Tweeter 3 cm phone type
Impedance	6Ω
Input power	80 W (music)
Output sound pressure level	87 dB/W (1.0 m)
Cross over frequency	2.8 kHz, 10 kHz
Frequency range	48 Hz–22 kHz (−16 dB)
Dimensions (W×H×D)	192×329×257 mm
Weight	3.9 kg

GENERAL

Power consumption	180 W
Power supply	AC 50/60 Hz, 230–240 V
Dimensions (W×H×D)	215×329×338 mm
Weight	7.7 kg

Notes:

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

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